

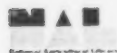
91-53



United States
Department of
Agriculture

National
Agricultural
Library

Beltsville
Maryland
20705

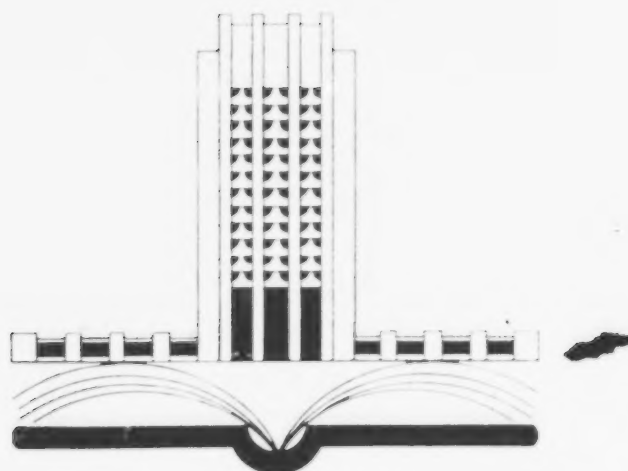


ISSN: 1052-5378

Water Quality and Forestry

January 1982 - July 1990

QB 91-53
Quick Bibliography Series



A 17. 18/4:

READER
FICHE

best copy available

Bibliographies in the Quick Bibliography Series of the National Agricultural Library, are intended primarily for current awareness, and as the title of the series implies, are not indepth exhaustive bibliographies on any given subject. However, the citations are a substantial resource for recent investigations on a given topic. They also serve the purpose of bringing the literature of agriculture to the interested user who, in many cases, could not access it by any other means. The bibliographies are derived from computerized on-line searches of the AGRICOLA data base. Timeliness of topic and evidence of extensive interest are the selection criteria.

The author/searcher determines the purpose, length, and search strategy of the Quick Bibliography. Information regarding these is available upon request from the author/searcher.

Copies of this bibliography may be made or used for distribution without prior approval. The inclusion or omission of a particular publication or citation may not be construed as endorsement or disapproval.

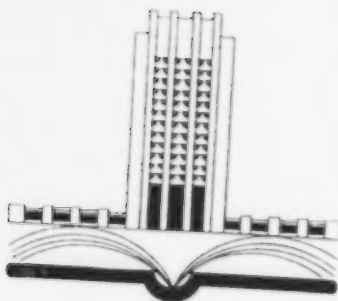
To request a copy of a bibliography in this series, send the title, series number and self-addressed gummed label to:

U.S. Department of Agriculture
National Agricultural Library
Public Services Division, Room 111
Beltsville, Maryland 20705

Water Quality and Forestry
January 1982 - July 1990

Quick Bibliography Series: QB 91-53
221 citations in English from AGRICOLA

Jodee Kuske
Water Quality Information Center



National Agricultural Library Cataloging Record:

Kuske, Jodee

Water quality and forestry.

(Quick bibliography series ; 91-53)

1. Water quality -- Bibliography. 2. Forests and forestry -- Environmental aspects -- Bibliography. I. Title.

aZ5071.N3 no.91-53



DOCUMENT DELIVERY SERVICES TO INDIVIDUALS

The National Agricultural Library (NAL) has a unique responsibility to supply copies of agricultural materials not found elsewhere.

Filling requests for materials readily available from other sources would divert NAL's resources and diminish its ability to serve as a national source for agricultural and agriculturally related materials. Therefore, NAL should be viewed as a library of last resort and individuals should submit requests first to local or state sources prior to sending to NAL. In the United States, possible sources are public libraries, land-grant university or other large research libraries within a state. Individuals in other countries should submit requests through major university, national, or provincial institutions.

If the needed publications are not available from these sources, the requests may be submitted to NAL with a statement indicating their non-availability. Submit one request per page following the instructions for libraries below.

NAL's DOCUMENT DELIVERY SERVICE INFORMATION FOR THE LIBRARY

The following information is provided to assist your librarian in obtaining the required materials.

LOAN SERVICE — Materials in NAL's collection are loaned only to other U.S. libraries. Requests for loans should be made through local public, academic, or special libraries.

The following materials are not available for loan: serials (except USDA serials); rare, reference, and reserve books; microforms; and proceedings of conferences or symposia. Photocopy or microform of non-circulating publications may be purchased as described below.

DOCUMENT DELIVERY SERVICE — Photocopies of articles are available for a fee. Requests must be made through local public, academic, or special libraries. The library should submit a separate interlibrary loan form for each article or item requested. If the citation is from an NAL database (CAIN/AGRICOLA, *Bibliography of Agriculture*, or the NAL Catalog) and the call number is given, that call number should be listed in the proper block on the request form. Willingness to pay charges must be indicated on the form. Compliance with copyright law or a statement that the article is for "research purposes only" must be included on the interlibrary loan form. Requests cannot be processed without these statements.

Charges:

- Photocopy, hard copy of microfilm and microfiche — \$5.00 for the first 10 pages or fraction copied from a single article or publication. \$3.00 for each additional 10 pages or fraction.
- Duplication of NAL-owned microfilm — \$10.00 per reel.
- Duplication of NAL-owned microfiche — \$ 5.00 for the first fiche and \$.50 for each additional fiche per title.

Billing — Charges include postage and handling, and are subject to change. Invoices are issued quarterly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. Requesters are encouraged to establish deposit accounts with NTIS. **DO NOT SEND PREPAYMENT.**

Send Requests to:

USDA, National Agricultural Library
Lending Branch, ILL, 6th Floor
Beltsville, Maryland 20705-2351

Questions concerning these services may be made by correspondence to Head, Lending Branch or by telephone (301) 344-3755.

AGRICOLA

Citations in this bibliography were
entered in the AGRICOLA
database between January 1979
and the present.

WATER QUALITY AND FORESTRY

SEARCH STRATEGY

Set	Items	Description
S1	42040	(GROUND()WATER OR GROUNDWATER OR UNDERGROUND()WATER OR SURFACE()WATER OR AQUIFER? OR CISTERN? OR SPRINGS (WATER) OR RIVER? OR LAKE? OR STREAM? OR POND? OR WETLAND?)/TI,DE,ID OR SH=P200
S2	50821	FOREST?/TI,DE,ID OR SH=K000
S3	35608	(WATER(2N) (QUALIT? OR POLLUT? OR CONTAMINAT?))/TI,DE,ID OR SH=W000
S4	431	S1 AND S2 AND S3
S5	392	S4/ENG
S6	286	S5 AND PY=1982:1990

0001

Acid precipitation and vegetation interaction in the Turkey Lake Forest watershed (Ontario).

Foster, N.W. ; Nicolson, J.A. (Ottawa) : Canadian Forestry Service. Canadian Forestry Service research notes. Apr/June 1983. v. 3 (2). p. 6-7. Includes references. (NAL Call No.: SD13.C23).

0002

Acid rain model: canopy module (Woods Lake in the Adirondack Mountains, New York, air quality, forested watershed).

Chen, C.W. JOEEDU. ; Hudson, R.J.M.-Gherini, S.A.-Dean, J.D.-Goldstein, R.A. New York : American Society of Civil Engineers, Environmental Engineering Division. Journal of Environmental Engineering. June 1983. v. 109 (3). p. 585-603. ill. Includes references. (NAL Call No.: 290.9 AM3PS (EE)).

0003

Acid rain: 1983-85.

Cheney, S. Beltsville, Md. : The Library. Quick bibliography series - National Agricultural Library (U.S.). Updates Quick Bibliography No. 83-18-Bibliography. Dec 1985. (86-23). 34 p. (NAL Call No.: DNAL aZ5071.N3).

0004

Acid snowpack chemistry in Pennsylvania, 1979-81 (Pollution, deciduous forests).

Dewalle, D.R. ; Sharpe, W.E.-Izbicki, J.A.-Winnies, D.L. Minneapolis, Minn. : American Water Resources Association. water resources bulletin. Dec 1983. v. 19 (6). p. 993-1001. maps. Includes references. (NAL Call No.: 292.9 AM34).

0005

ADAM'S RIB RECREATION AREA, WHITE RIVER NATIONAL FOREST, EAGLE COUNTY, COLORADO.

GLENWOOD SPRINGS, COLORADO DEPARTMENT OF AGRICULTURE, FOREST SERVICE JULY 1982 (EPA: JULY 20, 1982). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 429 PAGES. (NAL Call No.: B2-0573F).

(PUR)DEVELOPMENT OF A DOWNHILL SKIING AREA WITHIN THE 6,800-ACRE ADAM MOUNTAIN AREA OF THE EAGLE DISTRICT OF WHITE RIVER NATIONAL FOREST IN EAGLE COUNTY, COLORADO IS PROPOSED. THE TRACT IS LOCATED APPROXIMATELY 14 AIR MILES SOUTH OF EAGLE. THE PLAN WOULD INVOLVE DEVELOPMENT OF 2,300 ACRES OF LAND ON ADAM MOUNTAIN AND 520 ACRES ON EVE MOUNTAIN. APPROXIMATELY 700 ACRES OF SKIING TERRAIN WOULD REQUIRE CONSTRUCTION OF 17 LIFTS, ONE OR MORE OF WHICH COULD BE GONDOLA LIFTS. THE PRIMARY MOUNTAIN ACCESS POINTS WOULD BE LOCATED AT WOODRUN OR VASSAR MEADOW FOR DESTINATION RESORT USERS AND PIPE CREEK FOR DAY SKIERS. FISHER GULCH COULD BE USED AS A SECONDARY ACCESS POINT. PRIMARY BASE FACILITIES WOULD PROBABLY BE DEVELOPED IN THE WOODRUN AREA. THE SKI AREA WOULD BE CAPABLE OF ACCOMMODATING 9,000 SKIERS AT ANY ONE

TIME. THE NET VALUE OF THE FACILITIES WOULD BE APPROXIMATELY \$20.1 MILLION, AND THE BENEFIT-COST RATIO WOULD BE 32.6. (POS)THE SKI AREA WOULD INCREASE THE OVERALL RECREATIONAL CAPACITY OF THE BRUSH CREEK DRAINAGE, PROVIDING RECREATIONAL BENEFITS FOR REGIONAL RESIDENTS AND FINANCIAL BENEFITS FOR LOCAL RESIDENTS. OPERATION OF THE AREA WOULD REQUIRE EMPLOYMENT OF 3,960 WORKERS AND GENERATE TAX INCOME FOR THE LOCAL GOVERNMENT. CLEARANCE OF TIMBER FOR SKI FACILITIES WOULD RESULT IN THE PRODUCTION OF 2.5 MILLION BOARD-FEET OF WOOD PRODUCTS. (NEG)DEVELOPMENT OF THE AREA WOULD DISTURB 700 ACRES OF FORESTLAND, REDUCING THE AMOUNT OF FORAGE FOR BIG GAME IN THE BRUSH CREEK AREA FROM 808 ANIMAL UNIT MONTHS (AUMS) TO 373 AUMS, DECREASING THE POTENTIAL ANNUAL TIMBER YIELD OF THE AREA BY 257,000 BOARD-FEET, MODIFYING 1.1 MILES OF STREAM AND 10 TO 80 ACRES OF WETLAND, AND ELIMINATING OPPORTUNITIES FOR DISPERSED RECREATION IN THE AREA. SKI AREA ACTIVITIES WOULD RESULT IN ANNUAL CONSUMPTION OF 2,639 ACRE-FEET OF WATER AND A SLIGHT DECLINE IN AMBIENT AIR QUALITY. ACTIVITIES AT THE SITE COULD RESULT IN DISTURBANCE OF THE 27 CULTURAL RESOURCE SITES IN THE AREA. SKI FACILITIES WOULD ENCROAC

0006

Agricultural runoff in selected Vermont watersheds : main report, agricultural runoff in selected Vermont watersheds study / U.S. Department of Agriculture, Economic Research Service, Forest Service, Soil Conservation Service ; in cooperation with State of Vermont, Agency of Environmental Conservation, Department of Agriculture. - Burlington, Ver. (1 Burlington Square, Suite 205, Burlington, Ver. 05401) Soil Conservation Service 1983. "February 1983.". 160 p. in various pagings : ill., maps : 28 cm. Bibliography: p. 9-1 - 9-6. (NAL Call No.: aTD428.A37A37).

0007

Air and watershed management and the aquatic ecosystem.

Bormann, F.H. ; Likens, G.E. New York : Springer-Verlag, c1985. An Ecosystem approach to aquatic ecology : Mirror Lake and its environments / edited by Gene E. Likens. p. 436-444. (NAL Call No.: DNAL QH105.N4E3).

0008

Aluminum leaching by mineral acids in forest soils. I. nitric-sulfuric acid differences.

SSSJD4. James, B.R. ; Riha, S.J. Madison, Wis. : The Society. Soil Science Society of America journal. Jan/Feb 1989. v. 53 (1). p. 259-264. Includes references. (NAL Call No.: DNAL 56.9 S03).

In laboratory studies simulating snowmelt leaching of forest soils, HN03 leached more Al than did H2SO4 from soil columns containing a forest floor-spodic horizon sequence (FF/Bs) representative of high elevation forest soils and watersheds thought to be sensitive to acidification by acid precipitation.

Increasing the HNO₃ concentration 100-fold (pH 5 to 3) increased total Al concentration in leachates from 0.70 to 0.85 mM, while increasing H₂SO₄ concentration had no effect. Addition of pH 3 H₂SO₄ to the FF/Bs columns raised leachate pH relative to pH 3 HNO₃ and control treatments, and resulted in the lowest Al concentrations of all treatments in the first three of four sequential leachings. In albic (E) and ochric (A) mineral soil horizons below a forest floor, there were no differences between the acids and no effects of changing acid concentration. Concentrations of Al leached by the acids did not differ from those in control treatments. The differences in effects of HNO₃ and H₂SO₄ on soluble Al and pH in the Bs horizon and the lack of effect of either acid in the E and A horizons imply that the type of mineral horizon below the forest floor and the kind of acid leaching through these horizons are pertinent to predicting lake acidification in diverse forested watersheds. The results also have implications for pollution control strategies focusing solely on SO₂ emissions and designed to mitigate lake acidification.

0009

Aluminum leaching by mineral acids in forest soils. II. role of the forest floor.

SSSD4. James, B.R. ; Riha, S.J. Madison, Wis. : The Society. Soil Science Society of America journal, Jan/Feb 1989, v. 53 (1), p. 264-269. Includes references. (NAL Call No.: DNAL 56.9 S03).

To simulate the effects of forest floor organic horizons on leaching of labile and nonlabile forms of Al from underlying mineral soil horizons by acid precipitation, albic (E), ochric (A), and spodic (Bs) mineral horizons were leached in the laboratory with 1.0 mM HNO₃, 0.5 mM H₂SO₄, or NH₄NO₃ control solutions at ionic strength 0.01 with or without an Oi-Oe-Oa forest floor horizon sequence (FF) above each mineral horizon. Adding 2 and 0.5 cmolc(H⁺)/kg to the organic horizons and mineral soils, respectively, simulated snowmelt additions to the soils in mountainous regions of the northeastern USA, where lake acidification has been attributed to acid precipitation leaching of forest soils. Total Al concentrations in leachates from soil columns containing the E or A horizon below the FF were greater than the sum of the concentrations in leachates from the FF and mineral horizon when leached separately. This positive synergistic behavior of the FF-mineral horizon sequences was also observed in the FF-Bs horizon sequence when leached with the control solution, but the synergism was negative for both forms of Al when leached with the acids. Sulfuric acid leached less Al from the Bs horizon than did HNO₃, regardless of the presence of an FF, but HNO₃, H₂SO₄, and control solutions leached similar concentrations of Al from the E and A horizons. The FF

effects on the mineral soil leachates were attributed to effects of Ca, SO₄, NO₃, and dissolved organic C leached from the FF to the mineral horizons since the FF removed nearly all added H⁺.

0010

Aluminum solubility relationships in acid waters--a practical example of the need for a radical reappraisal.

JHYDA. Neal, C. Amsterdam : Elsevier Scientific Publishers, B.V. Journal of hydrology, Dec 30, 1988, v. 104 (1/4), p. 141-159. Includes references. (NAL Call No.: DNAL 292.8 J82).

0011

Application of the "Birkenes" model to two forested catchments on the Swedish west coast.

ECBUD. Grip, H. ; Jansson, P.E.-Johansson, H.-Nilsson, S.I. Stockholm : Swedish Natural Science Research Council. Ecological bulletins, 1985, (37), p. 176-192. ill. Includes references. (NAL Call No.: DNAL QH540.S7).

0012

The application of time-series modelling to short-term streamwater acidification in upland Scotland.

Langan, S.J. ; Whitehead, P.G. Wallingford, Oxfordshire : IAHS Press, 1987. Forest hydrology and watershed management / edited by R.H. Swanson, P.V. Bernier & P.D. Woodard. Paper presented at the "Vancouver Symposium," August, 1987, Vancouver, British Columbia, Canada, p. 75-87. Includes references. (NAL Call No.: DNAL GB842.F67).

0013

Aspects of current forestry practice and silvicultural trends in West Germany affecting fresh waters.

Bruenig, E.F. Chichester, England : Published for the Water Research Centre by E. Horwood, 1986. Effects of land use on fresh waters : agriculture, forestry, mineral exploitation, urbanization / editor, J.F. de L.G. Solbe, p. 378-397. ill., maps. Includes references. (NAL Call No.: DNAL TD423.E34).

0014

Assessment of silvicultural and grazing treatment impacts of infiltration and runoff water quality of longleaf-slash pine forest, Kisatchie National Forest, Louisiana.

Wood, J.C. ; Blackburn, W.H.-Pearson, H.A.-Hunter, T.K.-Knight, R.W. New Orleans, La. : The Station. Forest Service general technical report SO - United States, Southern Forest Experiment Station. Paper presented at the "Workshop on Ecological, Physical and Socioeconomic Relationships Within Southern National Forests," May 26-27, 1987, Long Beach, Mississippi, Oct 1987, (68), p. 245-249. Includes references. (NAL Call No.: DNAL ASD11.U57).

0015

Atmospheric deposition and ionic concentrations in forest soils of Isle Royale National Park, Michigan.
SSSJD4. Stottleyer, R. ; Hanson, D.G. Jr. Madison, Wis. : The Society. Soil Science Society of America Journal. Jan/Feb 1989. v. 53 (1). p. 270-274. Includes references. (NAL Call No.: DNAL 56.9 S03).
A 64-wk study of throughfall and soil solution was conducted on five ecosystem strata in Isle Royale National Park, MI, to examine the fate of atmospheric ionic inputs in mature boreal conifer and hardwood forests. Volume-weighted pH of bulk precipitation was 4.65. Weighted bulk throughfall pH was 4.6 under spruce *Picea glauca* (Muench) A. Voss and 5.2 under aspen (*Populus tremuloides* Michaux)-birch (*Betula papyrifera* Marsh). The forest canopy significantly increased the concentrations of Ca^{2+} , Mg^{2+} , and K^{+} in throughfall, and decreased the concentration in H^{+} beneath aspen-birch. Relative to precipitation, concentrations of Ca^{2+} , Mg^{2+} , Na^{+} , and $\text{SO}_4(2-)$ significantly increased in soil solution of both forest types while NO_3^- decreased. Within the soil ecosystem, K^{+} , NO_3^- , and H^{+} were strongly conserved. Concentration of soil solution $\text{SO}_4(2-)$ is higher under conifers, and its flux two- to three-fold greater. This suggests the possibility that boreal conifer forests may be more susceptible to cation leaching by mobile anions as $\text{SO}_4(2-)$ from atmospheric inputs.

0016

Atmospheric deposition to remote receptors. I. Precipitation quantities from the ILWAS-network.
WAPLA. Johannes, A.H. ; Altwicker, E.R. Dordrecht : D. Reidel Pub. Co. Water, air, and soil pollution. Mar 1986. v. 28 (1/2). p. 39-53. maps. Includes references. (NAL Call No.: DNAL TD172.W36).

0017

Atmospheric deposition to remote receptors. II. Temporal and spatial variation of inorganic ion species in precipitation over the ILWAS-network.
WAPLA. Altwicker, E.R. ; Johannes, A.H.-Clesceri, N.L. Dordrecht : D. Reidel Pub. Co. Water, air, and soil pollution. Mar 1986. v. 28 (1/2). p. 55-70. Includes references. (NAL Call No.: DNAL TD172.W36).

0018

Atmospheric deposition to remote receptors. III. Statistical analysis of precipitation data from the ILWAS-network.
WAPLA. Altwicker, E.R. ; Shanaghan, P.E.-Johannes, A.H. Dordrecht : D. Reidel Pub. Co. Water, air, and soil pollution. Mar 1986. v. 28 (1/2). p. 71-88. Includes references. (NAL Call No.: DNAL TD172.W36).

0019

BAYOU PIERRE WATERSHED, COPIAH AND LINCOLN COUNTIES, MISSISSIPPI.
JACKSON, MISSISSIPPI DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE NOVEMBER 1982 (EPA: NOVEMBER 22, 1982). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 127 PAGES. (NAL Call No.: 83-0041D).
(PUR)IMPLEMENTATION OF A WATERSHED PROTECTION AND FLOOD PREVENTION PROJECT WITHIN THE 241,229-ACRE BAYOU PIERRE WATERSHED IN COPIAH AND LINCOLN COUNTIES OF SOUTHWESTERN MISSISSIPPI IS PROPOSED. THE PREFERRED SCHEME WOULD INVOLVE PROVISION OF 23.8 MAN-YEARS OF TECHNICAL ASSISTANCE TO ACCELERATE PLANNING AND IMPLEMENTATION OF LAND-TREATMENT MEASURES AND CONSTRUCTION OF 13 FLOODWATER-RETARDING STRUCTURES AND A MULTIPLE-PURPOSE STRUCTURE FOR FLOOD CONTROL AND RECREATIONAL USE. DURING THE 10-YEAR PROJECT PERIOD, APPROXIMATELY 13,433 ACRES OF LAND WOULD BE TREATED UNDER THE ONGOING LAND-TREATMENT PROGRAM. AN ADDITIONAL 16,502 ACRES WOULD BE TREATED UNDER THE ACCELERATED PROGRAM DURING THE SAME PERIOD. LAND-TREATMENT MEASURES WOULD INCLUDE VARIOUS GRASSLAND RESOURCE MANAGEMENT SYSTEMS, FOREST-TREATMENT MEASURES, AND CROPLAND DEVELOPMENT PLANS. LAND TREATMENT WOULD BE CONCENTRATED IN AREAS IN WHICH EROSION RATES ARE HIGH. FLOOD-CONTROL MEASURES WOULD INCLUDE FLOODPROOFING OF ONE RESIDENTIAL STRUCTURE IN THE FLOODPLAIN BY CONSTRUCTING A DIKE AROUND THE BUILDING AND CONSTRUCTION OF 13 FLOODWATER-RETARDING STRUCTURES AND A MULTIPLE-PURPOSE STRUCTURE TO CONTROL RUNOFF ON AN AREA TOTALING 128.4 SQUARE MILES OR 39.97 PERCENT OF THE WATERSHED DRAINAGE. THE STRUCTURES, WHICH WOULD CONSIST OF COMPACTED EARTHFILL DAMS, REINFORCED CONCRETE SPILLWAYS, AND VEGETATED EMERGENCY SPILLWAYS, WOULD BE DESIGNED FOR PERMANENT STORAGE OF SEDIMENT AND TEMPORARY STORAGE OF FLOOD FLOWS. THE MULTIPLE-PURPOSE STRUCTURE WOULD BE ACCOMPANIED BY RECREATIONAL STRUCTURES ASSOCIATED WITH SWIMMING, PICNICKING, FAMILY CAMPING, BOATING, FISHING, AND HIKING. EASEMENTS WOULD BE PURCHASED ON 383 ACRES OF BUFFER ZONES ALONG CHANNELS TO PREVENT UNDUE ENCROACHMENT INTO THE FLOODPLAIN. ESTIMATED INSTALLATION COST FOR THE PROJECT IS \$11.0 MILLION, AND THE BENEFIT-COST RATIO ASSOCIATED WITH STRUCTURAL MEASURES OF THE PROJECT IS 1.5. (POS)FLOOD-CONTROL BENEFITS WOULD ACCRUE TO 205 LANDOWNERS OWNING 19,782 ACRES OF LAND

0020

Best management practices for controlling nonpoint-source pollution on forested watersheds.
JSWCA3. Lynch, J.A. ; Corbett, E.S.-Mussallem, K. Ankeny, Iowa : Soil Conservation Society of America. Journal of soil and water conservation. Jan/Feb 1985. v. 40 (1). p. 164-167. Includes references. (NAL Call No.: DNAL 56.8

J822).

0021

Best management practices for controlling nonpoint-source pollution on forested watersheds.

JSWCA3. Lynch, J.A. ; Corbett, E.S.-Mussallem, K. Ankeny, Iowa : Soil Conservation Society of America. Journal of soil and water conservation. Jan/Feb 1985. v. 40 (1). p. 164-167. Includes 11 references. (NAL Call No.: DNAL 56.8 J822).

0022

Biogeochemical influence of vegetation and soils in the ILWAS watersheds.

WAPLA. Cronan, C.S. Dordrecht : D. Reidel Pub. Co. Water, air, and soil pollution. Dec 1985. v. 26 (4). p. 355-371. maps. Includes references. (NAL Call No.: DNAL TD172.W36).

0023

Capacity of a swamp forest to assimilate the TOC loading from a sugar refinery wastewater stream.

SWJUA. Gambrell, R.P. ; Khalid, R.A.-Patrick, W.H. Jr. Alexandria, Va. : The Federation. Journal - Water Pollution Control Federation. Oct 1987. v. 59 (10). p. 897-904. maps. Includes references. (NAL Call No.: DNAL 293.8 SE8).

0024

Changes in forest floor and water quality following thinning and clearcutting of 20-year-old pine.

JEVQAA. McClurkin, D.C. ; Duffy, P.D.-Nelson, N.S. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. July/Sept 1987. v. 16 (3). p. 237-241. Includes references. (NAL Call No.: DNAL QH540.J6).

0025

Changes in solute chemistry of drainage waters following the clearfelling of a Sitka spruce plantation.

FRSTA. Adamson, J.K. ; Hornung, M.-Pyatt, D.G.-Anderson, A.R. London : Oxford University Press. Forestry : The journal of the Institute of Chartered Foresters. 1987. v. 60 (2). p. 165-177. Includes references. (NAL Call No.: DNAL 99.8 F767).

0026

Changes in the chemistry of surface waters.

ESTHAG. Driscoll, C.T. ; Likens, G.E.-Hedin, L.D.-Eaton, J.S.-Bormann, F.H. Washington, D.C. : American Chemical Society. Environmental science & technology. Literature review. Feb 1989. v. 23 (2). p. 137-143. ill. Includes references. (NAL Call No.: DNAL TD420.A1E5).

0027

Changes in water quality and climate after forest harvest in central Washington State

XFPNA. Fowler, W.B. ; Anderson, T.D.-Helvey, J.D. Portland, Or. : The Station. USDA Forest Service research

paper PNW-RP - United States. Pacific Northwest Research Station. Jan 1988. (388). 12 p. maps. Includes reference. (NAL Call No.: DNAL A99.9 F7625UNI).

0028

Characteristics of the hydrochemistry groundwaters in the forest and agricultural landscape of the southern Moscow region.

WARED4. Uchvatov, V.P. ; Bulatkin, G. New York : Consultants Bureau. Water resources. Translated from: Vodnye resursy. p. 30-38. (GB746.V55). Nov/D 1985 (pub. 1986). v. 12 (6). p. 530-531. maps. Includes references. (NAL Call No.: DNAL GB746.W33).

0029

Characterization of baseline precipitation and stream chemistry and nutrient budgets for control watershed

Swank, W.T. ; Waide, J.B. New York, N.Y. : Springer-Verlag. Ecological studies analysis and synthesis. In the series analytic: Forest hydrology and ecology at Coweeta / edited by W.T. Swank and D.A. Crossley, Jr. Proceedings of a symposium held in October 1984, Athens, Georgia. 1988. v. 66. p. 57-79. (NAL Call No.: DNAL QH540.E288).

0030

Characterization of the sorption of toxic and hazardous organic substances to groundwater aquifer solids.

SENSD. Uchirin, C.G. ; Katz, J.-Mangel, G.-Hunter, J.V. Amsterdam : Elsevier Science Publishers. B.V. Studies in environmental science. In the series analytic: Chemistry for Protection of the Environment. Paper presented at a conference, September 9-13, 1985, Leuven, Belgium. 1986. v. 29. p. 663-676. Includes references. (NAL Call No.: DNAL QH540.S8).

0031

A comparison of chemical and isotopic hydrograph separation.

WRERAQ. Hooper, R.P. ; Shoemaker, C.A. Washington, D.C. : American Geophysical Union. Water resources research. Sept 1986. v. 22 (10). p. 1444-1454. maps. Includes references. (NAL Call No.: DNAL 292.8 W295).

0032

Comparison of methods for estimating sulfate export from a forested watershed.

JEVQAA. Dann, M.S. ; Lynch, J.A.-Corbett, E.S. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. Apr/June 1986. v. 15 (2). p. 140-145. Includes reference. (NAL Call No.: DNAL QH540.J6).

0033

A comparison of streams in logged and unlogged areas of Great Smoky Mountain National Park (Tennessee).

Stisbee, D.G.HYDRB. ; Larson, G.L. The Hague : W. Junk. Hydrobiologia. June 1983. v. 102 (2). p. 99-111. maps. Includes references. (NAL Call No.: DNAL 292.8 W295).

0034

CONEJOS WILD AND SCENIC RIVER STUDY, CONEJOS COUNTY, COLORADO.

WASHINGTON, D.C. DEPARTMENT OF AGRICULTURE, FOREST SERVICE JUNE 1982 (EPA: SEPTEMBER 22, 1982). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 109 PAGES. (NAL Call No.: 82-0765F).

(PUR)INCLUSION WITHIN THE NATIONAL WILD AND SCENIC RIVERS SYSTEM IS PROPOSED FOR PORTIONS OF THE CONEJOS RIVER IN THE RIO GRANDE NATIONAL FOREST, CONEJOS COUNTY, COLORADO. DESIGNATION WOULD INCLUDE 25.6 MILES OF CONEJOS RIVER CORRIDOR, COVERING 8,192 ACRES, AS WILD RIVER AND 13.2 MILES OF RIVER CORRIDOR, COVERING 4,224 ACRES, AS RECREATIONAL RIVER. THE STUDY AREA ENCOMPASSES THE THREE FORKS OF THE RIVER FROM THEIR SOURCE TO THEIR CONFLUENCE, OBLITERATION OF A CAMPGROUND AND RELOCATION OF ITS FACILITIES AND IMPROVEMENT OF THE AREA TRAIL SYSTEM WOULD COST AN ESTIMATED \$1.9 MILLION. MAINTENANCE OF THE RIVER CORRIDOR WOULD COST AN ESTIMATED \$111,200 EACH YEAR. (POS)INCLUSION IN THE NATIONAL SYSTEM WOULD PROTECT THE NATURAL CHARACTER OF THE RIVER CORRIDOR. WATER QUALITY WITHIN AND DOWNSTREAM OF THE STUDY AREA WOULD BE MAINTAINED AT A HIGH LEVEL. (NEG)PROHIBITION OF MINERAL ENTRY, USE OF THE CORRIDOR FOR WATER AND POWER PROJECTS, AND GRAZING ON CORRIDOR LANDS WOULD RESULT. (LEG)WILD AND SCENIC RIVERS ACT OF 1968 (16 U.S.C. 1271 ET SEQ.). (REF)FOR THE ABSTRACT OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT, SEE 79-0850D, VOLUME 4, NUMBER 8

0035

Contributions of acid deposition to streamwater chemistry in three Precambrian Shield basins.

Nicolson, J.A. Wallingford, Oxfordshire : IAHS Press, 1987. Forest hydrology and watershed management / edited by R.H. Swanson, P.Y. Bernier & P.D. Woodard. Paper presented at the "Vancouver Symposium," August, 1987, Vancouver, British Columbia, Canada. p. 89-98. maps. Includes references. (NAL Call No.: DNAL G8842.F67).

0036

Contributions of road surface sediment to a western Washington stream.

FOCSA, Bilby, R.E. Bethesda, Md. : Society of American Foresters. Forest science. Dec 1985. v. 31 (4). p. 827-838. maps. Includes references. (NAL Call No.: DNAL 99.8 F7632).

0037

Control of the phosphorus level of effluent in the treatment of forest industry waste waters.

PGWTA, Vaananen, P. Oxford : Pergamon Press. Water science and technology : a journal of the International Association on Water Pollution Research. 1988. v. 20 (1). p. 81-86. Includes references. (NAL Call No.: DNAL TD420.A1P7).

0038

Controlling diffuse-source pollution associated with forest practices in North America.

Ponce, S.L. Chichester, England : Published for the Water Research Centre by E. Horwood, 1986. Effects of land use on fresh waters : agriculture, forestry, mineral exploitation, urbanization / editor, J.F. de L.G. Solbe. p. 432-443. 111. Includes references. (NAL Call No.: DNAL TD423.E34).

0039

Correlation between suspended sediment and other water quality parameters in small streams of forested east Texas.

TUSCA, Granillo, A.B. ; Chang, M.-Rashin, E.B. Lubbock, Tex. : Texas Academy of Science. The Texas journal of science. Sept 1985. v. 37 (2/3). p. 227-234. maps. Includes 14 references. (NAL Call No.: DNAL 470 T31).

0040

Cumulative effects of simulated acid rain on soil chemical and microbial characteristics and conifer seedling growth.

SSSJD4, McCall, J.G. ; Firestone, M.K. Madison, Wis. : The Society. Soil Science Society of America journal. May/June 1987. v. 51 (3). p. 794-800. Includes references. (NAL Call No.: DNAL 56.9 S03).

0041

DIAMOND FORK POWER SYSTEM, BONNEVILLE UNIT, CENTRAL UTAH PROJECT.

SALT LAKE CITY, UTAH DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION JUNE 1983 (EPA: JUNE 17, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 253 PAGES. (NAL Call No.: 83-0401D).

(PUR)DEVELOPMENT OF A POWER SYSTEM IS PROPOSED AS A COMPONENT OF INTERRELATED SYSTEMS OF THE CENTRAL UTAH PROJECT'S BONNEVILLE UNIT. THE CENTRAL UTAH PROJECT, INITIATED IN 1967 AND APPROXIMATELY 20 PERCENT COMPLETE, IS A MAJOR WATER DEVELOPMENT DESIGNED TO FULFILL AGRICULTURAL, MUNICIPAL, AND INDUSTRIAL WATER NEEDS FOR 12 COUNTIES IN NORTHERN AND CENTRAL UTAH AND TO PROVIDE HYDROELECTRIC POWER. THE PROJECT, WHICH WOULD BE LOCATED IN UTAH AND WASATCH COUNTIES, WOULD LIE IN THE UTAH NATIONAL FOREST OF THE WASATCH MOUNTAIN RANGE. THE PROPOSED POWER SYSTEM, TO BE KNOWN AS THE DIAMOND FORK POWER SYSTEM, WOULD DEVELOP HYDROELECTRIC POWER BY MEANS OF A TRANSBASIN DIVERSION OF WATER THAT WOULD DESCEND APPROXIMATELY 2,600 FEET FROM THE ENLARGED STRAWBERRY RESERVOIR IN THE UTAH BASIN TO THE CONFLUENCE OF DIAMOND FORK AND THE SPANISH FORK RIVER IN THE BONNEVILLE BASIN. THE WATER WOULD FLOW THROUGH A SYSTEM OF A DIKE, TUNNELS, PIPELINES, RESERVOIRS, AND POWER PLANTS. THE FOUR POWER PLANTS WOULD HAVE A COMBINED CAPACITY OF 1,147 MEGAWATTS (MW). CONVEYANCE WORKS WOULD INCLUDE TUNNELS, PIPELINES, AND PENSTOCKS. A

SWITCHYARD WOULD BE CONSTRUCTED AT EACH POWER PLANT, AND FOUR TRANSMISSION LINES WOULD INTERCONNECT THE SYSTEM. RECREATIONAL FACILITIES ASSOCIATED WITH THE PROJECT WOULD INCLUDE FULL-USE AREAS AT TWO LOCATIONS AND A DAY-USE AREA AT ANOTHER LOCATION. TWO EXISTING CAMPGROUNDS WOULD BE ENLARGED TO REPLACE TWO THAT WOULD BE ABANDONED, AND TRAILHEADS WOULD BE PROVIDED AT TWO SITES. MITIGATION FOR LOSS OF BIG-GAME AND OTHER HABITAT WOULD CONSIST OF ACQUISITION OF 4,440 ACRES OF PRIVATE LAND TO BE MANAGED FOR WILDLIFE USES. (POS)DEVELOPMENT OF WATER AND ENERGY RESOURCES THROUGH THE PLAN WOULD FULFILL PROJECT OBJECTIVES OF SUPPLYING IMMEDIATE AND PROJECTED NEEDS FOR THE RAPIDLY GROWING POPULATION ALONG THE WASATCH FRONT. SOME PROJECT ENERGY WOULD BE USED TO PUMP WATER FOR THE CENTRAL UTAH PROJECT, WHILE THE REMAINDER WOULD BE MARKETING FOR COMMERCIAL USE THROUGHOUT THE COLORADO

0042

Disposal of sewage effluent on forest land: effects on groundwater.

David, M.B. ; Struchtemeyer, R.A. Kew. (s.n.). Environmental technology letters. Mar 1982. v. 3 (3). p. 103-110. Includes 12 ref. (NAL Call No.: TD1.E59).

0043

Dissolved organic carbon in forested and cutover drainage basins, Westland, New Zealand.

Moore, T.R. Wallingford, Oxfordshire ; IAHS Press. 1987. Forest hydrology and watershed management / edited by R.H. Swanson, P.Y. Bernier & P.D. Woodard. Paper presented at the "Vancouver Symposium," August, 1987, Vancouver, British Columbia, Canada. p. 481-487. Includes references. (NAL Call No.: DNAL GB842.F67).

0044

Distribution and dynamics of organic matter and phosphorus in a sewage-enriched cypress swamp.

Nessel, J.K. ; Bayley, S.E. Gainesville, Fla. ; University Presses of Florida. 1986, c1984. Cypress swamps / Katherine Carter Ewel and Howard T. Odum, editors. p. 262-278. ill., maps. (NAL Call No.: DNAL QH541.S.C95C9).

0045

Effect of feedlot runoff on a southern Illinois forested watershed.

JEVQAA. Pinkowski, R.H. ; Rolfe, G.L.-Arnold, L.E. Madison, Wis. ; American Society of Agronomy. Journal of environmental quality. Jan/Mar 1985. v. 14 (1). p. 47-54. Includes references. (NAL Call No.: DNAL QH540.J6).

0046

Effect of forest management practices on water quality--a review of Canadian studies.

Krause, H.H. Ottawa ; National Research Council Canada. Proceedings of the Canadian Hydrology Symposium - Associate Committee on Hydrology. 1982. Paper presented at the Symposium on

Hydrological Processes of Forested Areas, Fredericton, New Brunswick, 14-1 June, 1982 -Literature review. 1982. p. 15-29. Includes references. (NAL Call No.: GB651.H8).

0047

The effect of logging and regeneration on groundwater, streamflow and stream salinity in the southern forest of Western Australia.

JHYDA. Borg, H. ; Stoneman, G.L.-Ward, C.G. Amsterdam ; Elsevier Scientific Publishers, B.V. Journal of hydrology. May 30, 1988. v. 99 (3/4). p. 253-270. maps. Includes references. (NAL Call No.: DNAL 292.8 J82).

0048

Effect of sulfometuron methyl on ground water and stream quality in coastal plain forest watersheds.

WARBA. Neary, D.G. ; Michael, J.L. Minneapolis, Minn. ; American Water Resources Association. Water resources bulletin. June 1989. b v. 25 (3). p. 617-623. maps. Includes references. (NAL Call No.: DNAL 292.9 AM34).

0049

Effects of experimental acidification of macroinvertebrate drift diversity in a mountain stream (Hubbard Brook Experimental Forest, New Hampshire, ecosystems).

Hall, R.J. ; Pratt, J.M.-Likens, G.E. Dordrecht, Holland. D. Reidel Pub. Co. Water, air, and soil pollution. July/Oct 1982. v. 18 (1/3). p. 273-287. maps. 2 p. ref. (NAL Call No.: TD172.W36).

0050

Effects of forest clearcutting in New England on stream chemistry (Watershed management).

Martin, C.W. ; Noel, D.S.-Federer, C. Madison, Wis. ; American Society of Agronomy. Journal of environmental quality. Apr/June 1984. v. 13 (2). p. 204-210. maps. Includes references. (NAL Call No.: QH540.J6).

0051

Effects of forest fertilization on selected ion concentrations in central Appalachian streams.

XFGTA. Helvey, J.D. ; Kochenderfer, J.N.-Edwards, P.J. St. Paul, Minn. ; Station. USDA Forest Service general technical report NC - North Central Forest Experiment Station. Paper presented at the Seventh Central Hardwood Forest Conference, Mar 5-8, 1989, Carbondale, Illinois. 1989. (13 p. 278-282. ill. Includes references. (NAL Call No.: DNAL aSD11.A352).

0052

Effects of forest herbicide application on streamwater chemistry in southwest British Columbia.

WARBA. Feller, M.C. Minneapolis, Minn. American Water Resources Association. Water resources bulletin. June 1989. v. 25 (3). p. 607-616. maps. Includes references. (NAL Call No.: DNAL 292.9 AM34).

0053

Effects of forest roads on watershed function in mountainous areas.

Megahan, W.F. Rotterdam : A.A. Balkema, 1988. Environmental geotechnics and problematic soils and rocks : proceedings of the international symposium held at Asian Institute of Technology, Bangkok / edited by A.S. Balasubramaniam ... et al. Meeting held in December 1985, Bangkok, Thailand. p. 335-348. Includes references. (NAL Call No.: DNAL TA710.4.A785S9 1985).

0054

The effects of forestry on the quantity and quality of runoff in upland Britain. Blackie, J.R. ; Newson, M.D. Chichester, England : Published for the Water Research Centre by E. Horwood, 1986. Effects of land use on fresh waters : agriculture, forestry, mineral exploitation, urbanization / editor, J.F. de L.G. Solbe. p. 398-412. maps. Includes references. (NAL Call No.: DNAL TD423.E34).

0055

The effects of hydrochemistry variability on water quality sampling frequencies in an alpine-subalpine forest basin.

Stednick, J.D. Wallingford, Oxfordshire : IAHS Press, 1987. Forest hydrology and watershed management / edited by R.H. Swanson, P.Y. Bernier & P.D. Woodard. Paper presented at the "Vancouver Symposium," August, 1987, Vancouver, British Columbia, Canada. p. 401-407. Includes references. (NAL Call No.: DNAL GB842.F67).

0056

Effects of land use and topography on some water quality variables in forested east Texas.

Chang, M.WARBA. ; McCullough, J.D.-Granillo, A.B. Minneapolis : American Water Resources Association. Water resources bulletin. Apr 1983. v. 19 (2). p. 191-196. ill., maps. Includes references. (NAL Call No.: 292.9 AM34).

0057

Effects of permanently raised water tables on forest overstory vegetation in the vicinity of the Tennessee-Tombigbee Waterway / by Charles V. Klimas.

Vicksburg, Miss. : U.S. Army Engineer Waterways Experiment Station, Environmental Laboratory ; Springfield, Va. : Available from NTIS, 1982. Cover title. - "August 1982." - At head of title. Environmental & Water Quality Operational Studies - "Prepared for U.S. Army Engineer District, Mobile." - Final report. 31 p. : 27 cm. Bibliography: p. 23-31. (NAL Call No.: DNAL GB842.K5).

0058

Effects of pesticide applications on forested watersheds.

Neary, D.G. New York, N.Y. : Springer-Verlag. Ecological studies : analysis and synthesis. In the series analytic: Forest hydrology and ecology at Coweeta / edited by W.T. Swank and

D.A. Crossley, Jr. Proceedings of a symposium held in October 1984, Athens, Georgia, 1988. v. 66. p. 325-337. (NAL Call No.: DNAL QH540.E288)

0059

The Effects of some forest practices on water quality and yield in the Reefton Experimental Area, Victoria / by Hydrology Section, Soil Conservation Authority ; edited by A.Y.K. Wu, M.P. Papworth and D.W. Flinn.

Wu, A. Y. K.-Papworth, M. P.-Flynn, D. W. Victoria, Australia? : The Section, 1984. Cover title. v. 1: Reefton Experimental Area pretreatment compilation report. - "March 1984." v. : ill. : 30 cm. Includes bibliographical references. (NAL Call No.: DNAL TD322.V5E33).

0060

Effects of surface coal-mine reclamation on stream quality in a small watershed near Nelsonville, southeastern Ohio / by S.M. Hindall ; prepared in cooperation with the U.S. Department of Agriculture, Forest Service and the U.S. Department of the Interior, Bureau of Land Management, Eastern States Office. -- Hindall, S. M. Columbus, Ohio : U.S. Geological Survey, 1984. 1v. 28 p. : ill., maps : 28 cm. -- Bibliography: p. 22. (NAL Call No.: DNAL GB701.W375 no.84-4179).

0061

Element leaching and capillary rise in sandy soil cores: experimental results. JEVQAA. Sheppard, M.I. ; Thibault, D.H.-Mitchell, J.H. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. July/Sept 1987. v. 16 (3). p. 273-284. ill. Includes references. (NAL Call No.: DNAL QH540.J6).

0062

Erosion and sediment control at road-stream crossings (Forestry).

Rothwell, R.L.FRCRA. Vancouver : Canadian Institute of Forestry. The Forestry chronicle. Apr 1983. v. 59 (2). p. 62-66. ill. Includes references. (NAL Call No.: 99.8 F7623).

0063

Evaluation of nonpoint source impacts on water quality from forest practices in Idaho: relation to water quality standards.

Bauer, S.B. Washington, D.C. : U.S. Environ Protection Agency, Office of Water Regul and Standards, 1985. Perspectives on nonpoint source pollution. proceedings of a national conference, Kansas City, Missouri, May 19-22, 1985. p. 455-458. Includes references. (NAL Call No.: DNAL TD223.P39).

0064

Evidence for the cultural acidification of lakes in the northern Lake States.

Nichols, D.S. ; Verry, E.S. St. Paul, Minn. : Acid Rain Foundation, c1985. Air pollutants effects on forest ecosystems : May 8-9, 1985, St. Paul, MN / major

sponsors, The National Acid Precipitation Assessment Program, USDA Forest Service ... et al. : coordinated by the Ac. p. 253-265. maps. Includes references. (NAL Call No.: DNAL QH545.A3A5).

0065

Factors affecting snowmelt streamwater chemistry in the Black Forest (West Germany).

WAPLA, Feger, K.H. ; Brahmer, G. Dordrecht : D. Reidel Pub. Co. Water, air, and soil pollution. Nov 1986. v. 31 (1/2). p. 257-265. Includes references. (NAL Call No.: DNAL TD172.W36).

0066

Federal Insecticide, Fungicide, and Rodenticide Act hearings before the Committee on Agriculture, Nutrition, and Forestry, United States Senate, One Hundredth Congress, first session on S. 1518 ...

Washington, D.C. : U.S. G.P.O. : For sale by the Supt. of Docs., Congressional Sales Office, U.S. G.P.O., 1988. Distributed to some depository libraries in microfiche. - "April 29, May 20, and July 30, 1987"--Pts. 1-2. 2 v. : 111. ; 23 cm. Includes bibliographical references. (NAL Call No.: DNAL K26.A35 1987e).

0067

First-year effects of clearcutting an oak-hickory watershed on water yield. Brozka, R.J. ; Rolfe, G.L.-Arnold, L.E. Minneapolis, Minn., American Water Resources Association. Water resources bulletin. Feb 1982. v. 18 (1). p. 139-145. Includes ref. (NAL Call No.: 292.9 AM34).

0068

Forest access roads: design, maintenance, and soil loss.

Swift, L.W. Jr. New York, N.Y. : Springer-Verlag. Ecological studies : analysis and synthesis. In the series analytic: Forest hydrology and ecology at Coweeta / edited by W.T. Swank and D.A. Crossley, Jr. Proceedings of a symposium held in October 1984, Athens, Georgia. 1988. v. 66. p. 313-324. (NAL Call No.: DNAL QH540.E288).

0069

Forest and lake experiments on a grand scale.

NYFLAV, Fahey, T.J. ; Schofield, C.L. Ithaca, N.Y. : New York Agric. Exp. Stations and New York State College of Agric. & Life Sciences. New York's food and life sciences quarterly. 1989. v. 19 (4). p. 19-23. 111. maps. (NAL Call No.: DNAL S95.E2).

0070

Forest chemicals and water quality.

JFUSA, Rydellius, J.A. Bethesda, Md. : Society of American Foresters. Journal of forestry. Oct 1985. v. 83 (10). p. 610. 111. (NAL Call No.: DNAL 99.8 F768).

0071

Forest harvesting and water: the Lake States experience.

WARBA, Verry, E.S. Minneapolis, Minn. American Water Resources Association. Water resources bulletin. Dec 1986. v. 22 (6). p. 1039-1047. maps. Includes references. (NAL Call No.: DNAL 292.9 AM34).

0072

Forest harvesting effects on water quality and nutrient status in the boreal forest (Canada).

Nicolson, J.A. ; Foster, N.W.-Morrison I.K. Ottawa : National Research Council Canada. Proceedings of the Canadian Hydrology Symposium - Associate Committee on Hydrology. 1982. Paper presented at the Symposium on Hydrological Processes of Forested Areas, Fredericton, New Brunswick, 14-16 June, 1982 - Literature review. 1982. p. 71-89. 111. Includes references. (NAL Call No.: GB651.H8).

0073

Forest influence on the surface water chemistry of granitic basins receiving acid precipitation in the Vosges massifs, France.

Probst, A. ; Fritz, B.-Ambroise, B.-Viville, D. Wallingford, Oxfordshire : IAHS Press, 1987. Forest hydrology and watershed management / edited by R.H. Swanson, P.V. Bernier & P.D. Woodard. Paper presented at the "Vancouver Symposium," August, 1987, Vancouver, British Columbia, Canada. p. 109-120. maps. Includes references. (NAL Call No.: DNAL GB842.F67).

0074

Forest management benefits water quality.

Aslin, R.G. ; Atchison, F.D. Manhattan, Kan. : The Service, L - Cooperative Extension Service, Kansas State University. May 1984. (702). 4 p. 111. (NAL Call No.: DNAL 275.29 K13LE).

0075

Forest site preparation and water quality in Texas.

Blackburn, W.H. ; DeHaven, M.G.-Knight R.W. New York : American Society of Civil Engineers, c1982. Proceedings of the Specialty Conference on Environmentally Sound Water and Soil Management : Orlando, Fla., July 20-23, 1982 / E.G. Kruse, C.R. Burdick, and Y.A. Yousef, co-editors. p. 57-66. Includes references. (NAL Call No.: TC803.S64 1982).

0076

Forest watershed.

AKFRAC, Lawson, E.R. ; Beasley, R.S.-Miller, E.L.-Turton, D.J. Fayetteville, Ark. : The Station, Arkansas farm research - Arkansas Agricultural Experiment Station. Nov/D 1989. v. 38 (6). p. 6. maps. (NAL Call No.: DNAL 100 AR42F).

0077

Forested wetlands in urbanizing landscapes.

XFGSA. Brown, M.T. Asheville, N.C. : The Station. General technical report SE - U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station. Paper presented at a "Symposium on the Forested Wetlands of the Southern United States," July 12-14, 1988, Orlando, Florida, Jan 1989. (50). p. 19-26. ill., maps. Includes references. (NAL Call No.: DNAL aSD433.A53).

0078

The Forested wetlands of the southern United States proceedings of the symposium : Orlando, Florida, July 12-14, 1988 / editors Donal D. Hook, Russ Lea ; sponsored by The Man and The Biosphere Program ... et al.

; Hook, Donal D.-Lea, Russ. Asheville, N.C. : United States Dept. of Agriculture, Forest Service, Southeastern Forest Experiment Station, 1989. "January 1989"--P. 2 of cover. v. 168 p. : ill., maps : 28 cm. Includes bibliographies. (NAL Call No.: DNAL aSD433.A53 no.50).

0079

Forestry activities and water quality in Alabama : effects, recommended practices, and an erosion-classified system / Michael S. Golden ... (et al.).

; Golden, Michael S. Auburn Alabama Agricultural Experiment Station, Auburn University 1984. "February 1984". 87 p. : ill., maps : 23 cm. --. Bibliography: p. 78-87. (NAL Call No.: 100 AL15 (1) no.555).

0080

Forestry and forest management impacts on wetlands.

McKee, W.H. Jr. Washington, D.C. : Environmental Law Institute, c1985. Proceedings of the conference--wetlands of the Chesapeake / edited by Hazel A. Groman ... et al. ; sponsored by the Waterfowl Festival, Inc., U.S. Environmental Protection Agency, and the William Bingham Foundation. Meeting held April 9-11, 1985 in Easton, Maryland. p. 216-224. Includes references. (NAL Call No.: DNAL QH76.S.C48P76).

0081

Forestry and fresh waters: problems and remedies.

Binns, W.D. Chichester, England : Published for the Water Research Centre by E. Horwood, 1986. Effects of land use on fresh waters : agriculture, forestry, mineral exploitation, urbanization / editor, J.F. de L.G. Solbe. p. 364-377. maps. Includes references. (NAL Call No.: DNAL TD423.E34).

0082

Functions and values of bottomland hardwood forests along the Cache River, Arkansas: implications for management.

XFGSA. Clairain, E.J. Jr. ; Kleiss, B.A. Asheville, N.C. : The Station. General technical report SE - U.S. Department of Agriculture, Forest Service,

Southeastern Forest Experiment Station. Paper presented at a "Symposium on the Forested Wetlands of the Southern United States," July 12-14, 1988, Orlando, Florida, Jan 1989. (50). p. 27-33. maps. Includes references. (NAL Call No.: DNAL aSD433.A53).

0083

GASQUET MOUNTAIN MINING PROJECT, DEL NORTE COUNTY, CALIFORNIA.

EUREKA, CALIFORNIA DEPARTMENT OF AGRICULTURE, FOREST SERVICE MARCH 1983 (EPA: MARCH 8, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 371 PAGES. (NAL Call No.: 83-0184D). (PUR)CONSTRUCTION AND OPERATION OF A LATERITE MINE ON AN 8,000-ACRE TRACT WITHIN SIX RIVERS NATIONAL FOREST AND DEL NORTE COUNTY, CALIFORNIA ARE PROPOSED. THE CALIFORNIA NICKEL CORPORATION WOULD OPERATE THE 20-YEAR MINING DEVELOPMENT, WHICH CONTAINS A LATERITE DEPOSIT AVERAGING APPROXIMATELY 14 FEET IN THICKNESS AND VARYING FROM 2 FEET TO 30 FEET. DUE TO THE WET NATURE OF SOME OF THE MATRIX AND THE LACK OF CONSISTENT BEDROCK LEVEL, THE MOST SUITABLE MINING METHOD WOULD INVOLVE USE OF A BACKHOE EXCAVATOR WORKING FROM THE CREST OF THE CUT. THE BACKHOE WOULD LOAD THE MATERIAL AS IT WAS EXCAVATED INTO HAULAGE TRUCKS POSITIONED ON A TERTIARY ROAD AT THE CREST OF THE PIT. CRUSHED ROCK WOULD BE USED TO FORM THE TERTIARY ROADS. A SINGLE EXCAVATOR/BACKHOE, WITH A BUCKET SIZE OF 8.5 CUBIC YARDS, WOULD BE USED FOR EXCAVATING THE LATERITE, FOR DITCHING AND OTHER MISCELLANEOUS WORK, A SMALLER BACKHOE WOULD BE USED; IT WOULD ALSO FUNCTION AS A BACKUP FOR THE LARGER BACKHOE. EACH HAULAGE TRUCK WOULD HAVE A CAPACITY OF 85 TONS; 13 TRUCKS WOULD BE UTILIZED. ASSOCIATED ONSITE PLANT FACILITIES WOULD INCLUDE ORE PREPARATION, LEACHING, SOLUTION PURIFICATION, AND PRODUCT RECOVERY MECHANISMS. THE PLANT WOULD OCCUPY 64 ACRES AND CONTAIN POWER GENERATION FACILITIES, AS WELL AS ALL FACILITIES NECESSARY FOR ORE PROCESSING VIA A SULFURIC ACID LEACH METHOD. THREE RESERVOIRS WOULD BE CONSTRUCTED IN COPPER HILL CREEK TO SUPPLY PROCESS WATER AND TO IMPOUND POTENTIALLY CONTAMINATED PLANT RUNOFF. MINE TAILINGS WOULD BE REPLACED INTO THE MINE VOID; REVEGETATION AND DRAINAGE-CONTROL MEASURES WOULD BE INCLUDED IN RECLAMATION. (POS)MINING AND PLANT PROCESSING ACTIVITIES WOULD PRODUCE 9,650 TONS OF NICKEL, 1,000 TONS OF COBALT, 50,000 TONS OF CHROMITE, AND MORE THAN 100,000 TONS OF MAGNESIUM OXIDE EACH YEAR. IN ADDITION TO INCREASING THE NATION'S DEVELOPED RESOURCE POOL, THE PROJECT WOULD EMPLOY 100 TO 1,200 PERSONS DURING THE 24-MONTH CONSTRUCTION PERIOD AND 540 PERSONS DURING THE OPERATION PERIOD. (NEG

0084

Glyphosate application in forest-ecological aspects. V. The water quality of forest brooks after manual clearing or extreme glyphosate application.

Ogner, G. Stockholm : Almqvist & Wiksell Periodical Company. Scandinavian journal of forest research. 1987. v. 2 (4). p. 509-516. maps. Includes references. (NAL Call No.: DNAL SD1.S34).

0085

Glyphosate application in forest-ecological aspects. IV. The water quality of forest brooks after routine application.

Ogner, G. Stockholm : Almqvist & Wiksell Periodical Company. Scandinavian journal of forest research. 1987. v. 2 (4). p. 499-508. Includes references. (NAL Call No.: DNAL SD1.S34).

0086

Ground water quality (pH) under different vegetative covers at Osamund (Nilgiri Hills) (Eucalyptus globulus, natural Shola forest, grassland, India). Mathur, H.N. ; Raj, S.F.H.-Naithani, S. Dehra Dun : N.K. Mathur. The Indian forester. Feb 1984. v. 110 (2). p. 110-116. maps. Includes 6 references. (NAL Call No.: 99.8 IN2).

0087

Groundwater and soil leachate inorganic nitrogen in a Wisconsin red pine plantation amended with paper industry sludge.

JEVQAA. Bockheim, J.G. ; Benzel, T.C.-Lu, R.L.-Thiel, D.A. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. Oct/Dec 1988. v. 17 (4). p. 729-734. Includes references. (NAL Call No.: DNAL QH540.J6).

In late August 1984, a 2.5:1 primary/secondary paper industry sludge was applied to a row-thinned, 27-yr-old red pine (*Pinus resinosa* Ait.) plantation in central Wisconsin at levels of 32, 63, and 94 dry Mg ha⁻¹ (550, 1120, and 1670 kg N ha⁻¹, respectively). There were positive treatment effects on NO₃-N and NH₄-N in soil leachates and groundwater, but because of sample variability, few of these differences were significant at the p less than or equal to 0.05 level. Nitrate-N concentrations exceeded 10 mg L⁻¹ for all treatments at the 10-, 45-, and 75-cm depths, but the potability standard was exceeded at the 165-cm depth and in groundwater only on plots receiving the medium and heavy applications. Nitrate-N concentrations generally were greater in the upper 30 cm of the saturated zone than at 60 and 90 cm, suggesting a lack of vertical mixing. Whereas the maximum NO₃-N concentration decreased with depth, the time required for NO₃-N concentrations to exceed 10 mg L⁻¹ for a given treatment and the duration of the period when NO₃-N concentrations exceeded 10 mg L⁻¹ increased with depth. The seasonal trends in inorganic N concentrations in soil water collected at the 10- and

45-cm depths could be explained on the basis of N mineralization as derived from field incubation studies. A regression equation relating maximum NO₃-N in groundwater to N content of the applied sludge indicates that little groundwater degradation will occur at depths of greater than or equal to 5.2 m in central Wisconsin when the N application to pole-sized red pine is less than or equal to 800 kg ha⁻¹ (less than or equal to 46 dry Mg sludge ha⁻¹).

0088

Groundwater monitoring: a new challenge for the forest products industry.

Unwin, J.P. ; Miner, R.A. Atlanta, Ga. : TAPPI Press, c1983. 1983 Environmental Conference : Westin Peachtree Plaza, Atlanta, GA, March 2-4. p. 61-66. Includes references. (NAL Call No.: TD899.P3T36 1983).

0089

Groundwater monitoring experiences in the forest products industry (Environmental control, Legislation). Litzinger, M.E. Atlanta, Ga. : The Association. TAPPI : journal of the Technical Association of the Pulp and Paper Industry. Sept 1984. v. 67 (9). p. 98-101. Includes references. (NAL Call No.: 302.8 T162).

0090

HOMESTAKE PHASE II PROJECT, EAGLE COUNTY, COLORADO.

LAKEWOOD, COLORADO DEPARTMENT OF AGRICULTURE, FOREST SERVICE JUNE 1982 (EPA: JUNE 4, 1982). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 700, ARLINGTON, VA 22209. 2 VOLUMES. (NAL Call No.: 82-0537D).

(PUR)ISSUANCE OF A PERMIT TO THE CITIES OF AURORA AND COLORADO SPRINGS FOR AN EASEMENT TO CONSTRUCT A WATER DIVERSION SYSTEM WITHIN THE WHITE RIVER NATIONAL FOREST IN EAGLE COUNTY, COLORADO IS PROPOSED. THE SYSTEM WOULD USE FOUR TUNNELS WITH A COMBINED LENGTH OF 56,500 FEET, TWO PARALLEL 3,000-FOOT SECTIONS OF 66-INCH-DIAMETER GRAVITY PIPELINE, FOUR RISER SHAFTS, AND VARIOUS DIVERSION STRUCTURES TO PROVIDE AN AVERAGE ANNUAL YIELD OF 20,783 ACRE-Feet OF WATER. THE FIRST TUNNEL WOULD EXTEND NORTHWARD AND WESTWARD A DISTANCE OF 27,000 FEET FROM THE VICINITY OF THE FANCY CREEK DIVERSION DAM TO A POINT BENEATH CROSS CREEK. THE SECOND TUNNEL WOULD EXTEND NORTHWESTERLY FROM THE RISER SHAFT AT CROSS CREEK TO A POINT BENEATH WEST CROSS CREEK, A DISTANCE OF 3,000 FEET. THIRD TUNNEL WOULD EXTEND NORTHEASTERLY AND EASTERLY 17,500 FEET TO A POINT BENEATH FALL CREEK. THE FOURTH TUNNEL WOULD EXTEND FROM A POINT ON THE THIRD TUNNEL UNDER NOTCH MOUNTAIN TO A POINT BENEATH EAST CROSS CREEK, A DISTANCE OF 9,000 FEET. A RISER SHAFT, DIVERSION PIPELINE, DIVERSION DAM, GATED DIVERSION STRUCTURE, AND MEASURING PIPELINE WOULD BE BUILT AT THE POINT WHERE EACH TUNNEL TERMINATED BENEATH A CREEK. A 66-INCH GRAVITY PIPELINE WOULD EXTEND 3,000 FEET

FROM THE TUNNEL PORTAL AT FANCY CREEK TO A POINT NEAR THE NORTH PORTAL OF THE MISSOURI TUNNEL TO PROVIDE CAPACITY TO CONVEY THE TOTAL CROSS CREEK TUNNEL FLOW TO THE MISSOURI TUNNEL. THE CROSS CREEK FLOW WOULD INITIALLY BE CONVEYED FROM FANCY CREEK PORTAL TO THE MISSOURI TUNNEL BY THE EXISTING FANCY-FRENCH GRAVITY CONDUIT, BUT, AS ADDITIONAL STREAMS WERE DIVERTED, THE CONDUIT CAPACITY WOULD BE EXCEEDED AND AN ADDITIONAL 66-INCH PARALLEL PIPELINE WOULD BE REQUIRED. A POWER DISTRIBUTION LINE COULD BE REQUIRED ALONG HOMESTAKE CREEK ROAD TO PROVIDE SUPPORT FOR THE SYSTEM. TOTAL CAPITAL COST OF THE PROJECT IS ESTIMATED AT \$115 MILLION, AND ANNUAL OPERATING COST IS ESTIMATED AT \$826,000. (POS) ADDITIONAL WATER MADE AVAILABLE TO THE TWO APPLICANT CITIES WOULD

0091

HOMESTAKE WATER DIVERSION PROJECT, PHASE II, WHITE RIVER NATIONAL FOREST, EAGLE COUNTY, COLORADO.

LAKEWOOD, COLORADO DEPARTMENT OF AGRICULTURE, FOREST SERVICE MAY 1983 (EPA MAY 26, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 700, ARLINGTON, VA 22209. 2 VOLUMES. (NAL Call No.: 83-0380F). (PUR) ISSUANCE OF A PERMIT TO THE CITIES OF AURORA AND COLORADO SPRINGS FOR AN EASEMENT TO CONSTRUCT A WATER DIVERSION SYSTEM WITHIN THE WHITE RIVER NATIONAL FOREST IN EAGLE COUNTY, COLORADO IS PROPOSED. THE SYSTEM WOULD USE FOUR TUNNELS WITH A COMBINED LENGTH OF 56,500 FEET, TWO PARALLEL 3,000-FOOT SECTIONS OF 66-INCH-DIAMETER GRAVITY PIPELINE, FOUR RISER SHAFTS, AND VARIOUS DIVERSION STRUCTURES TO PROVIDE AN AVERAGE ANNUAL YIELD OF 20,783 ACRE-FEET OF WATER. THE FIRST TUNNEL WOULD EXTEND NORTHWARD AND WESTWARD A DISTANCE OF 27,000 FEET FROM THE VICINITY OF THE FANCY CREEK DIVERSION DAM TO A POINT BENEATH CROSS CREEK. THE SECOND TUNNEL WOULD EXTEND NORTHWESTERLY FROM THE RISER SHAFT AT CROSS CREEK TO A POINT BENEATH WEST CROSS CREEK, A DISTANCE OF 3,000 FEET. A THIRD TUNNEL WOULD EXTEND NORTHEASTERLY AND EASTERLY 17,500 FEET TO A POINT BENEATH FALL CREEK. THE FOURTH TUNNEL WOULD EXTEND FROM A POINT ON THE THIRD TUNNEL UNDER NOTCH MOUNTAIN TO A POINT BENEATH EAST CROSS CREEK, A DISTANCE OF 9,000 FEET. A RISER SHAFT, DIVERSION PIPELINE, DIVERSION DAM, GATED DIVERSION STRUCTURE, AND MEASURING PIPELINE WOULD BE BUILT AT THE POINT WHERE EACH TUNNEL TERMINATED BENEATH A CREEK. A 66-INCH GRAVITY PIPELINE WOULD EXTEND 3,000 FEET FROM THE TUNNEL PORTAL AT FANCY CREEK, TO A POINT NEAR THE NORTH PORTAL OF THE MISSOURI TUNNEL TO PROVIDE CAPACITY TO CONVEY THE TOTAL CROSS CREEK TUNNEL FLOW TO THE MISSOURI TUNNEL. THE CROSS CREEK FLOW WOULD INITIALLY BE CONVEYED FROM FANCY CREEK PORTAL TO THE MISSOURI TUNNEL BY THE EXISTING FANCY-FRENCH GRAVITY CONDUIT, BUT, AS ADDITIONAL STREAMS WERE DIVERTED, THE CONDUIT CAPACITY WOULD BE EXCEEDED AND AN

ADDITIONAL 66-INCH PARALLEL PIPELINE WOULD BE REQUIRED. A POWER DISTRIBUTION LINE COULD BE REQUIRED ALONG HOMESTAKE CREEK ROAD TO PROVIDE SUPPORT FOR THE SYSTEM. TOTAL CAPITAL COST OF THE PROJECT IS ESTIMATED AT \$112 MILLION. (POS) ADDITIONAL WATER MADE AVAILABLE TO THE TWO APPLICANT CITIES WOULD SUPPORT RAPID GROWTH IN THE AREA, RESULTING FROM

0092

Hydrologic responses to forest management in pine flatwoods and Florida's water.

Riekerk, H. ; Mace, A.C.-Neary, D.G.-Swindel, B.F. S.I. : The Society. Proceedings - Soil and Crop Science Society of Florida. 1986, v. 45, p. 163-169. maps. Includes references. (NAL Call No.: DNAL 56.9 S032).

0093

The ILWAS model: formulation and application.

WAPLA. Gherini, S.A. ; Mok, L.-Hudson, R.J.M.-Davis, G.F.-Chen, C.W.-Goldstein, R.A. Dordrecht : D. Reidel Pub. Co. Water, air, and soil pollution. Dec 1985, v. 26 (4), p. 425-459. 111. maps. Includes references. (NAL Call No.: DNAL TD172.W36).

0094

Impact of backcountry recreationists on the water quality of an Adirondack Lake.

Werner, R.G. ; Leonard, R.E.-Crevelling, J.O. Broomall, Pa. : The Station. Forest Service research note NE - Northeastern Forest Experiment Station, Forest Service, U.S. Department of Agriculture. 1985. (326). 4 p. Includes references. (NAL Call No.: DNAL A99.9 F7622U).

0095

The impact of conifer afforestation on water quality in an upland catchment in southwest England.

Williams, A.G. ; Ternan, J.L.-Kent, M. Wallingford, Oxfordshire : IAHS Press. 1987. Forest hydrology and watershed management / edited by R.H. Swanson, P.Y. Bernier & P.D. Woodard. Paper presented at the "Vancouver Symposium," August, 1987, Vancouver, British Columbia, Canada, p. 451-461. 111. maps. Includes references. (NAL Call No.: DNAL GB842.F67).

0096

Impact of nitrogen and phosphorus on (14C) lignocellulose decomposition by stream wood microflora.

APMBA. Aumen, N.G. ; Bottomley, P.J.-Gregory, S.V. Washington, D.C. : American Society for Microbiology. Applied and environmental microbiology. May 1985, v. 49 (5), p. 1113-1118. Includes 29 references. (NAL Call No.: DNAL 448.3 AP5).

0097

The impact of plantation forestry on stream sedimentation in tropical and sub-tropical Queensland--an initial assessment.

Cassells, D.S. ; Gilmour, D.A.-Gordon, P. Barton, A.C.T. : The Institution. 1982. Agricultural Engineering

Conference 1982 : resources-efficient use and conservation, Armidale, NSW, 22-24 August 1982, preprints of papers / National Commit. Agric. Engineering of Institution of Engineers, Australia, p. 138-142. Includes references. (NAL Call No.: S671.3.A36 1982).

O098

Impacts of forest drainage on water quality.

Trettin, C.C. ; Sheets, P.J. St. Joseph, Mich. : American Society of Agricultural Engineers, c1987. Drainage design and management : proceedings of the Fifth National Drainage Symposium, December 14-15, 1987, Hyatt Regency Chicago in Illinois Center, p. 231-239. Includes references. (NAL Call No.: DNAL TC970.N35 1987).

O099

The impacts of forestry upon stream fauna.

Cowie, B. Wellington North : Water and Soil Directorate, Ministry of Works and Development. Water & soil miscellaneous publication - National Water and Soil Conservation Authority. Paper presented at a seminar "Biological Monitoring in Freshwaters: Part 2", November 21-23, 1984, Hamilton, New Zealand, AGL, 1985, (83), p. 217-223. Includes references. (NAL Call No.: DNAL GB823.W3).

O100

Impacts of silviculture on flatwoods runoff, water quality, and nutrient budgets (Forest hydrology).

Riekerk, H. WARBA, Minneapolis : American Water Resources Association. Water resources bulletin, Feb 1983, v. 19 (1), p. 73-79, ill. Includes references. (NAL Call No.: 292.9 AM34).

O101

Implementing the public/private nonpoint source management partnership: a state forestry perspective.

Davis, R.L. ; Miller, R.L. Washington, D.C. : U.S. Environ Protection Agency, Office of Water Regul and Standards, 1985. Perspectives on nonpoint source pollution : proceedings of a national conference, Kansas City, Missouri, May 19-22, 1985, p. 325-329. Includes references. (NAL Call No.: DNAL TD223.P39).

O102

An improved method of chemical analysis for low levels of nitrogen in forest streams or in rainwater.

XPNWA, Holcombe, E.E. ; Moore, D.G.-Fredriksen, R.L. Portland, Or. : The Station, PNW research note - U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Aug 1986, (449), 12 p. Includes references. (NAL Call No.: DNAL A99.9 F7625U).

O103

The influence of acid precipitation on stream chemistry in a small forested basin in southwestern British Columbia.

Feller, M.C. Wallingford, Oxfordshire : IAHS Press, 1987. Forest hydrology and

watershed management / edited by R.H. Swanson, P.Y. Bernier & P.D. Woodard. Paper presented at the "Vancouver Symposium," August, 1987, Vancouver, British Columbia, Canada. - Includes statistical data, p. 33-47. Includes references. (NAL Call No.: DNAL GB842.F67).

O104

The influence of atmospheric nitrogen influx upon the stream nitrogen profile of a relatively undisturbed forested watershed (West Fork Walker Branch).

Nuckols, J.R. ; Moore, I.D. Amsterdam, The Netherlands, Elsevier Scientific. Journal of hydrology, May 1982, v. 57 (1/2), p. 113-135, 2 p. ref. (NAL Call No.: 292.8 J82).

O105

The influence of plantation forestry on the pH and aluminium concentration of upland Welsh streams: a re-examination.

ENVPA, Ormerod, S.U. ; Donald, A.P.-Brown, S.U. Essex : Elsevier Applied Science. Environmental pollution, 1989, v. 62 (1), p. 47-62, maps. Includes references. (NAL Call No.: DNAL QH545.A1E52).

O106

Influence of wetlands and coal mining on stream water chemistry.

WAPLA, Wieder, R.K. ; Lang, G.E. Dordrecht : D. Reidel Pub. Co. Water, air, and soil pollution, Nov 1984, v. 23 (4), p. 381-396, maps. Includes references. (NAL Call No.: DNAL TD172.W36).

O107

Input-output budgets of selected nutrients on an experimental watershed near Parsons, West Virginia.

Helvey, J.D. ; Kunkle, S.H. Broomall, Pa. : The Station, USDA Forest Service Research Paper NE - United States, Northeastern Forest Experiment Station, 1986, (584), 7 p. ill., maps. Includes references. (NAL Call No.: DNAL A99.9 F7622UN).

O108

The Integrated Lake-Watershed Acidification Study: atmospheric inputs.

WAPLA, Johannes, A.H. ; Altwicker, E.R.-Clesceri, N.L. Dordrecht : D. Reidel Pub. Co. Water, air, and soil pollution, Dec 1985, v. 26 (4), p. 339-353, maps. Includes references. (NAL Call No.: DNAL TD172.W36).

O109

Integrated Lake-Watershed Acidification Study: summary.

WAPLA, Goldstein, R.A. ; Chen, C.W.-Gherini, S.A. Dordrecht : D. Reidel Pub. Co. Water, air, and soil pollution, Dec 1985, v. 26 (4), p. 327-337, ill., maps. Includes references. (NAL Call No.: DNAL TD172.W36).

0110

Interactions between streamside vegetation and stream dynamics.

Heede, B.H. Fort Collins, Colo. : The Station. General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona, 1985. (120). p. 54-58. 111. Includes references. (NAL Call No.: DNAL ASD11.A42).

0111

Irrigation water quality in tree nurseries in the inland west.

CNRXA, Landis, T.D. Edmonton : The Centre. Information report NOR-X - Northern Forest Research Centre, 1982. (241). p. 60-67. Includes references. (NAL Call No.: DNAL SD1.N6).

0112

The laboratory role in watershed management Rochester, New York.

Kriewall, D.F. ; Schantz, L.G. Denver, CO : American Water Works Association, c1986. Proceedings / Water Quality Technology Conference, Houston, Texas, December 8-11, 1985 ; sponsored by the Water Quality Division. p. 319-338. 111. maps. Includes references. (NAL Call No.: DNAL TD370.A18 1985).

0113

Land treatment of chemical manufacturing wastewater.

Kendall, R.L. ; Algieri, W.G.-Nutter, W.L. Seattle : University of Washington Press, 1986. The Forest alternative for treatment and utilization of municipal and industrial wastes / edited by Dale W. Cole, Charles L. Henry, and Wade L. Nutter. p. 549-555. 111. maps. Includes references. (NAL Call No.: DNAL TD897.F65).

0114

LARKIN CREEK WATERSHED, LEE AND ST. FRANCIS COUNTIES, ARKANSAS.

LITTLE ROCK, ARKANSAS DEPARTMENT OF AGRICULTURE, FOREST SERVICE AND SOIL CONSERVATION SERVICE MAY 1983 (EPA: JUNE 2, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 127 PAGES. (NAL Call No.: 83-0378F). (PUR)COMPLETION OF IMPLEMENTATION OF A LAND AND RESOURCES MANAGEMENT PLAN FOR THE 37,863-ACRE LARKIN CREEK WATERSHED OF LEE AND ST. FRANCIS COUNTIES, ARKANSAS IS PROPOSED. THE WATERSHED, WHICH ENCOMPASSES THE SMALL COMMUNITIES OF GILL, FOUR FORKS, HOLUB, AND WESTOR, LIES IN THE LOWER MISSISSIPPI WATER RESOURCE REGION AND THE MISSISSIPPI/ST. FRANCIS WATER RESOURCE SUBREGION. THE RECOMMENDED SCHEME WOULD INCLUDE 50.1 MILES OF CHANNEL WORK ON A MAIN DITCH AND 16 LATERALS, LAND TREATMENT TO REDUCE EROSION AND IMPROVE ON-FARM DRAINAGE SYSTEMS, 54 WATER-CONTROL STRUCTURES, 185 GRADE-STABILIZATION STRUCTURES, AND CONSERVATION EASEMENTS

AND WILDLIFE MANAGEMENT PLANS ON 1,035 ACRES OF FOREST AND WETLAND. LAND TREATMENT MEASURES WOULD INCLUDE INSTALLATION OF CROP AND TILLAGE SYSTEMS ON 1,500 ACRES OF EXCESSIVELY ERODING CROPLAND, LAND GRADING ON 220 ACRES TO IMPROVE IRRIGATION AND DRAINAGE, LAND SMOOTHING ON 4,300 ACRES OF CROPLAND, CONSTRUCTION OF 183.5 MILES OF DRAINAGE FIELD DITCHES, AND IMPLEMENTATION OF CROP RESIDUE SYSTEMS, DELAYED SEEDBED PREPARATIONS, AND CROP ROTATION SYSTEMS ON 3,090 ACRES OF FUTURE CROPLAND. CHANNEL WORK WOULD INCLUDE REALIGNMENT, ENLARGEMENT, AND CLEARING AND SNAGGING. APPROXIMATELY 325 CORRUGATED METAL PIPES WOULD BE INSTALLED ALONG THE SIDES OF DITCHES TO PREVENT EROSION, AND ROCK RIPRAP WOULD BE PLACED ON STREAM BANKS AT 10 BRIDGES. SEVENTEEN WOODEN BRIDGES WOULD BE REPLACED. THE MITIGATION PLAN THAT WOULD ACCOMPANY THE PROJECT WOULD INVOLVE OBTAINING EASEMENTS ON 746 ACRES OF SEASONALLY FLOODED WOODLANDS, 91 ACRES OF WOODLAND WITH OR WITHOUT SEASONAL FLOODING, 163 ACRES OF PERMANENTLY FLOODED WETLANDS, AND 30 ACRES OF SEASONALLY FLOODED CROPLAND. ESTIMATED COST OF THE PROJECT IS \$6.8 MILLION. (POS)IMPROVEMENTS IN LAND RESOURCES RESULTING FROM FLOODWATER REDUCTION AND BETTER DRAINAGE CONDITIONS WOULD PRODUCE AVERAGE ANNUAL BENEFITS WORTH \$266,600 AND \$179,400, RESPECTIVELY. FARM INCOME AND INCOME OF RELATED SECTORS WOULD INCREASE, RESULTING IN

0115

LARKIN CREEK WATERSHED, LEE AND ST. FRANCIS COUNTIES, ARKANSAS.

LITTLE ROCK, ARKANSAS DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE NOVEMBER 1982 (EPA: NOVEMBER 23, 1982). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 82 PAGES. (NAL Call No.: 83-0038D). (PUR)COMPLETION OF IMPLEMENTATION OF A LAND AND RESOURCES MANAGEMENT PLAN FOR THE 37,863-ACRE LARKIN CREEK WATERSHED OF LEE AND ST. FRANCIS COUNTIES, ARKANSAS IS PROPOSED. THE WATERSHED, WHICH ENCOMPASSES THE SMALL COMMUNITIES OF GILL, FOUR FORKS, HOLUB, AND WESTOR, LIES IN THE LOWER MISSISSIPPI WATER RESOURCE REGION AND THE MISSISSIPPI/ST. FRANCIS WATER RESOURCE SUBREGION. THE RECOMMENDED SCHEME WOULD INCLUDE 50.1 MILES OF CHANNEL WORK ON A MAIN DITCH AND 16 LATERALS, LAND TREATMENT TO REDUCE EROSION AND IMPROVE ON-FARM DRAINAGE SYSTEMS, 54 WATER-CONTROL STRUCTURES, 185 GRADE STABILIZATION STRUCTURES, AND CONSERVATION EASEMENTS AND WILDLIFE MANAGEMENT PLANS ON 1,035 ACRES OF FOREST AND WETLAND. LAND TREATMENT MEASURES WOULD INCLUDE INSTALLATION OF CROP AND TILLAGE SYSTEMS ON 1,500 ACRES OF EXCESSIVELY ERODING CROPLAND, LAND GRADING ON 220 ACRES TO IMPROVE IRRIGATION AND DRAINAGE, LAND SMOOTHING ON 4,300 ACRES OF CROPLAND, CONSTRUCTION OF 183.5 MILES OF DRAINAGE FIELD DITCHES, AND IMPLEMENTATION OF CROP RESIDUE SYSTEMS, DELAYED SEEDBED

PREPARATIONS, AND CROP ROTATION SYSTEMS ON 3,090 ACRES OF FUTURE CROPLAND. CHANNEL WORK WOULD INCLUDE REALIGNMENT, ENLARGEMENT, AND CLEARING AND SNAGGING. APPROXIMATELY 325 CORRUGATED METAL PIPES WOULD BE INSTALLED ALONG THE SIDES OF DITCHES TO PREVENT EROSION, AND ROCK RIPRAP WOULD BE PLACED ON STREAM BANKS AT 10 BRIDGES. SEVENTEEN WOODEN BRIDGES WOULD BE REPLACED. THE MITIGATION PLAN THAT WOULD ACCOMPANY THE PROJECT WOULD INVOLVE OBTAINING EASEMENTS ON 746 ACRES OF SEASONALLY FLOODED WOODLANDS, 91 ACRES OF WOODLAND WITH OR WITHOUT SEASONAL FLOODING, 183 ACRES OF PERMANENTLY FLOODED WETLANDS, AND 30 ACRES OF SEASONALLY FLOODED CROPLAND. ESTIMATED COST OF THE PROJECT IS \$6.8 MILLION. (POS)IMPROVEMENTS IN LAND RESOURCES RESULTING FROM FLOODWATER REDUCTION AND BETTER DRAINAGE CONDITIONS WOULD PRODUCE AVERAGE ANNUAL BENEFITS WORTH \$266,600 AND \$179,400, RESPECTIVELY. FARM INCOME AND INCOME OF RELATED SECTORS WOULD INCREASE, RESULTING IN

O116

LITTLE WHITESTICK-CRANBERRY CREEKS SUBWATERSHED OF PINEY CREEK WATERSHED, RALEIGH COUNTY, WEST VIRGINIA. MORGANTOWN, WEST VIRGINIA DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE APRIL 1983 (EPA: JULY 1, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 154 PAGES. (NAL Call No.: 83-0444F). (PUR)IMPLEMENTATION OF A WATERSHED PROTECTION AND FLOOD PREVENTION PROJECT WITHIN THE 9,295-ACRE LITTLE WHITESTICK-CRANBERRY CREEKS WATERSHED IN RALEIGH COUNTY OF SOUTHERN WEST VIRGINIA IS PROPOSED. THE WATERSHED LIES IN THE EASTERN ALLEGHENY PLATEAU AND MOUNTAINS LAND RESOURCE AREA AND IN THE APPALACHIAN PLATEAU. THE WATERSHED PROTECTION COMPONENT OF THE PROJECT WOULD CONSIST OF ACCELERATED LAND TREATMENT ON 1,157 ACRES OF LAND, WHILE FLOOD PREVENTION FEATURES WOULD CONSIST OF ENLARGEMENT OF 2.1 MILES OF CRANBERRY CREEK AND 1.5 MILES OF LITTLE WHITESTICK CREEK TO CONTAIN THE 10-YEAR-FREQUENCY FLOOD AND EXCAVATION OF A SHORT SECTION OF NEW CHANNEL. STREAM CORRIDOR PRESERVATION WOULD BE ACHIEVED BY DESIGNATING 14.2 ACRES OF HIGH-QUALITY RIPARIAN HABITAT ALONG 1.2 MILES OF LITTLE WHITESTICK CREEK DOWNSTREAM OF PIKEVIEW DRIVE AS A GREENBELT CORRIDOR. LAND-TREATMENT MEASURES WOULD INVOLVE PROVISION OF TECHNICAL AND FINANCIAL ASSISTANCE TO PREPARE RESOURCE INVENTORIES, DEVELOP CONSERVATION PLANS, AND APPLY CONSERVATION MEASURES TO 125 ACRES OF PASTURE, 40 ACRES OF HAYLAND, 372 ACRES OF FOREST, AND 620 ACRES OF LAND PLANNED FOR CONVERSION TO URBAN LAND. PLANTING, EROSION CONTROL, GRADING, AND BRUSH MANAGEMENT WOULD BE IMPLEMENTED ON SELECTED AREAS. LAND TREATMENT WOULD ALSO INVOLVE DEVELOPMENT OF TEMPORARY DIVERSIONS AND WATERWAYS AND EXCAVATION OF SMALL SEDIMENT BASINS. A TOTAL OF 3,453 PERSON-DAYS OF

TECHNICAL ASSISTANCE WOULD BE REQUIRED TO IMPLEMENT THE LAND TREATMENT. MEASURES TAKEN TO MITIGATE ADVERSE EFFECTS OF PROJECT DEVELOPMENTS WOULD INCLUDE CONSTRUCTION OF A CONCRETE WEIR ON A DIVERSION STRUCTURE TO ENHANCE FLOWS IN WHITESTICK CREEK AND ACQUISITION OF EASEMENTS TO MAINTAIN A PORTION OF CRANBERRY CREEK AS AN OVERFLOW CHANNEL. ESTIMATED COSTS OF LAND TREATMENT AND STRUCTURAL DEVELOPMENTS ARE \$517,720 AND \$13.96 MILLION, RESPECTIVELY. (POS)STRUCTURAL FEATURES OF THE PLAN WOULD PROVIDE 100-YEAR FLOOD PROTECTION TO 55 COMMERCIAL AND 4 RESIDENTIAL PROPERTIES ON CRAN

O117

Long-term patterns of water quality in a managed watershed in Oregon. 1. Suspended sediment. WARBA, Sullivan, K. Minneapolis, Minn. American Water Resources Association. Water resources bulletin. Dec 1985. v. 21 (6). p. 977-987. maps. Includes references. (NAL Call No.: DNAL 292.9 AM94).

O118

LPK TIMBER SALE PLAN FOR THE 1984-89 OPERATING PERIOD, TONGASS NATIONAL FOREST, ALASKA. KETCHIKAN, ALASKA DEPARTMENT OF AGRICULTURE, FOREST SERVICE FEBRUARY 1983 (EPA: FEBRUARY 24, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 2 VOLUMES. (NAL Call No.: 83-0183F). (PUR)HARVESTING OF AS MUCH AS 960 MILLION BOARD-FEET OF TIMBER FROM THE TONGASS NATIONAL FOREST OF SOUTHEASTERN ALASKA UNDER A LONG-TERM TIMBER SALE CONTRACT WITH THE LOUISIANA-PACIFIC CORPORATION IS PROPOSED. THE PREFERRED ALTERNATIVE WOULD INVOLVE DEVIATION FROM THE LAND MANAGEMENT PLAN USED TO DIRECT ACTIVITIES ASSOCIATED WITH MANAGEMENT OF THE TONGASS NATIONAL FOREST. DEVIATIONS WOULD CALL FOR ALTERATION OF THE PLAN'S PROVISIONS REGARDING DISTRIBUTION OF OLD-GROWTH TIMBER RETENTION AND EXTENDED ROTATION AND WOULD REQUIRE REDISTRIBUTION OF HARVEST AREAS WITHIN THE SAME TOTAL ACREAGE LIMITATIONS. THE NUMBER OF ACRES TO BE RETAINED AS OLD-GROWTH WILDLIFE HABITAT UNDER THE LAND MANAGEMENT PLAN WOULD BE RETAINED, BUT THE ACREAGE WOULD BE REDISTRIBUTED TO ALLOW FOR MORE RETENTION IN AREAS OF HIGH PUBLIC USE TO BETTER MEET CURRENT AND FUTURE DEMANDS FOR WILDLIFE. PARTICULARLY THE SITKA BLACK-TAILED DEER. THE HARVESTING PLAN ALSO WOULD INVOLVE ADVANCED ROADING AND PRERODING WITHIN THE POLK INLET MANAGEMENT AREA AND WITHIN A SMALL AREA NEAR THORNE BAY PRIOR TO THE BEGINNING OF THE 1984 TO 1989 OPERATING PERIOD. IN ADDITION, THE PLAN WOULD INVOLVE CONSTRUCTION OF ADMINISTRATIVE FACILITIES, A LOGGING CAMP, AND A PRIMARY LOG-TRANSFER FACILITY IN PORT STEWART. (POS)THE HARVEST PLAN WOULD MEET TIMBER HARVEST COMMITMENTS IN THE PRESENT AND IN THE

FUTURE, WOULD BE CONSISTENT WITH THE LAND MANAGEMENT PLAN FOR THE TONGASS NATIONAL FOREST AND REGIONAL LAND MANAGEMENT PROVISIONS, AND WOULD PROVIDE LOGGING CAMP STABILITY. IN ADDITION, THE PLAN WOULD CONCENTRATE ON THE PROTECTION OF WILDLIFE AND OTHER RESOURCES IN AREAS MOST HEAVILY USED BY THE PUBLIC. LOCATION OF ANCILLARY FACILITIES AT PORT STEWART WOULD PREVENT IMPACTS TO ADDITIONAL BAYS. PRESERVE THE LIFESTYLE OF THE MEYERS CHUCK COMMUNITY, AND PROVIDE TOPOGRAPHIC FEATURES THAT WOULD LEND THEMSELVES TO DEVELOPMENT. HABITAT AND POPULATIONS OF EARLY SUCCESSIONAL SPECIES COULD BENEFIT SIGNIFICANTLY FROM LOGGING. (NEG)RETENTION OF TI

0119
The magnitude of upland silvicultural nonpoint source pollution in the South.
xFGSA, Riekerk, H. ; Neary, D.G.-Swank, W.T. Asheville, N.C. : The Station, General technical report SE - U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station. Paper presented at a "Symposium on the Forested Wetlands of the Southern United States," July 12-14, 1988, Orlando, Florida. - Literature review, Jan 1989. (50). p. 8-18. i11. Includes references. (NAL Call No.: DNAL a5D433.A53).

0120
Management of forests with water conservation function.
Kremer, V. ; Perina, V. Wallingford, Oxfordshire : IAHS Press, 1987. Forest hydrology and watershed management / edited by R.H. Swanson, P.V. Bernier & P.D. Woodard. Paper presented at the "Vancouver Symposium," August, 1987, Vancouver, British Columbia, Canada. p. 475-480. Includes references. (NAL Call No.: DNAL GB842.F67).

0121
Management of streamside zones on municipal watersheds.
Corbett, E.S. ; Lynch, J.A. Fort Collins, Colo. : The Station, General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona, 1985. (120). p. 187-190. Includes references. (NAL Call No.: DNAL a5D11.A42).

0122
Managing and protecting forest water resources.
xAKAA, Nichols, D.S. Washington, D.C. : U.S. Department of Agriculture, The Yearbook of agriculture, 1986. p. 236-242. i11. (NAL Call No.: DNAL 1 AG84y).

0123
Managing riparian ecosystems to control nonpoint pollution.
J5WCA3, Lowrance, R. ; Leonard, R.-Sheridan, J. Ankeny, Iowa : Soil Conservation Society of America, Journal of soil and water conservation, Jan/Feb

1985, v. 40 (1), p. 87-91. i11., maps. Includes references. (NAL Call No.: DNAL 56.8 J822).

0124
Managing southeast wetlands.
JFUSA, Nutter, W.L. ; Gregory, J.D. Bethesda, Md. : Society of American Foresters, Journal of forestry, Oct 1985, v. 83 (10), p. 609. i11. (NAL Call No.: DNAL 99.8 F768).

0125
Manganese biogeochemistry in a small Adirondack forested lake watershed.
WRERA0, Shanley, J.B. Washington, D.C. : American Geophysical Union, Water resources research, Nov 1986, v. 22 (12), p. 1647-1656. i11., maps. Includes references. (NAL Call No.: DNAL 292.8 W295).

0126
Minimizing adverse impacts on wetlands of water quality associated with forest and agricultural practices.
Lee, C.R. Washington, D.C. : Environmental Law Institute, c1985. Proceedings of the conference--wetlands of the Chesapeake / edited by Hazel A. Groman ... et al. ; sponsored by the waterfowl Festival, Inc., U.S. Environmental Protection Agency, and the William Bingham Foundation. Meeting held April 9-11, 1985 in Easton, Maryland. p. 225-230. i11. Includes references. (NAL Call No.: DNAL QH76.5.C48P76).

0127
MISSISSIPPI COUNTY SPILLWAY AREA WATERSHED, MISSOURI.
COLUMBIA, MISSOURI DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE JUNE 1983 (EPA: JULY 5, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 99 PAGES. (NAL Call No.: 83-0432F). (PUR)IMPLEMENTATION OF A WATERSHED PROTECTION AND FLOOD PREVENTION PLAN ON THE 100,314-ACRE MISSISSIPPI COUNTY SPILLWAY AREA WATERSHED IN MISSISSIPPI COUNTY, MISSOURI IS PROPOSED. THE PREFERRED PLAN WOULD CONSIST OF 38 MILES OF CHANNEL WORK AND INSTALLATION OF 430 GRADE STABILIZATION STRUCTURES. CHANNEL WORK WOULD INVOLVE ENLARGEMENT OF 37 MILES OF EXISTING CHANNEL AND CONSTRUCTION OF ONE MILE OF NEW CHANNEL. ACTIVITIES ALSO WOULD BE UNDERTAKEN TO MAINTAIN FLOWS IN AN ADDITIONAL 60 MILES OF CHANNEL WITHIN THE WATERSHED. WATERSHED LANDOWNERS WOULD COMMIT THEMSELVES TO PRESERVING 1,342 ACRES OF BOTTOMLAND HARDWOODS AND WETLANDS. EIGHT STRUCTURES THAT CARRY STATE OR COUNTY ROADS OVER CHANNELS WOULD BE REPLACED. ESTIMATED COST OF THE PROJECT, WHICH WOULD BE INSTALLED OVER A FIVE-YEAR PERIOD, IS \$3.7 MILLION, AND THE BENEFIT-COST RATIO IS ESTIMATED AT 2.9. (POS)CHANNEL WORK WOULD REDUCE EROSION AND CONSEQUENT SEDIMENTATION WITHIN STREAMS BY 40 PERCENT, IMPROVING THE AQUATIC CONDITION OF THE WATERSHED AND REDUCING AVAILABLE TRANSPORT SITES FOR

TOXIC WASTES. COMMITMENTS BY LOCAL PEOPLE WOULD ENSURE THE PRESERVATION OF LARGE AREAS OF BOTTOMLAND HARDWOOD, AND 337 ACRES OF HABITAT WOULD BE CREATED ON CHANNEL BANKS, SPOIL SLOPES, MAINTENANCE ROADS, AND GRADE STABILIZATION STRUCTURES. INSTALLATION OF GRADE STABILIZATION STRUCTURES WOULD CONTROL EROSION IN AREAS WHERE CONCENTRATED FLOW ENTERS CHANNELS. THE PROJECT WOULD INCREASE NET ANNUAL FARM INCOME BY \$630,000 BY REDUCING FLOOD DAMAGE TO CROPS AND RELATED AGRICULTURAL AND NONAGRICULTURAL FACILITIES. DRAINAGE IMPROVEMENTS RESULTING FROM PROJECT ACTIVITIES AND STRUCTURES WOULD INCREASE NET ANNUAL FARM INCOME IN THE WATERSHED BY \$600,000. APPROXIMATELY 250 FARMS WOULD BENEFIT FROM THE PROJECT. (NEG)CHANNEL ENLARGEMENT WOULD DESTROY 40 ACRES OF BOTTOMLAND HARDWOOD AND WETLAND. APPROXIMATELY 1,704 ACRES OF WOODLAND AND WETLAND COULD FACE FUTURE CLEARING PRESSURE FROM NON-PROJECT-RELATED ACTIVITIES. CHANNEL WORK AND STRUCTURE INSTA

0128

Modeling the effects of acid deposition: estimation of long-term water quality responses in a small forested catchment. WRERA0. Cosby, B.J. ; Wright, R.F. ; Hornbarger, G.M. ; Galloway, J.N. Washington, D.C. : American Geophysical Union. Water resources research, Nov 1985, v. 21 (11), p. 1591-1601. Includes references. (NAL Call No.: DNAL 292.8 W295).

0129

Modeling water quality on a small forested watershed in southeastern Oklahoma: the hydrologic component. Turton, D.J. ; Haan, C.T. ; Miller, E.L. St. Joseph, Michigan : American Society of Agricultural Engineers, c1988. Modeling agricultural, forest, and rangeland hydrology : proceedings of the 1988 International Symposium, December 12-13, 1988, Hyatt Regency Chicago, in Illinois Center, Chicago, Illinois, p. 95-107. ill. Includes references. (NAL Call No.: DNAL GB656.2.M33M6).

0130

Monitoring of recharge water quality under woodland.

JHYDA. Krajenbrink, G.J.W. ; Ronen, D. ; Duijvenbooden, W. van ; Magaritz, M. ; Wever, D. Amsterdam : Elsevier Scientific Publishers, B.V. Journal of hydrology, Mar 15, 1988, v. 98 (1/2), p. 83-102. ill., maps. Includes references. (NAL Call No.: DNAL 292.8 J82).

0131

Movement of bacteria and nutrients from pit latrines in the Boundary Waters Canoe Area Wilderness (Superior National Forest in northeastern Minnesota, water quality).

Nichols, D.S. WAPLA. ; Prettyman, D. ; Gross, M. Dordrecht : D. Reidel Pub. Co. Water, air, and soil pollution, Aug 1983, v. 20 (2), p. 171-180. Includes references. (NAL Call No.: TD172.W36).

0132

MOYIE WILD AND SCENIC RIVER PROPOSAL, IDAHO.

COEUR D'ALENE, IDAHO DEPARTMENT OF AGRICULTURE, FOREST SERVICE JULY 1982 (EPA: SEPTEMBER 21, 1982). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 2 VOLUMES. (NAL Call No.: 82-0771F). (PUR)MANAGEMENT AND PROTECTION OF THE MOYIE RIVER AREA IN BOUNDARY COUNTY, IDAHO THROUGH NATIONAL FOREST LAND-MANAGEMENT PLANNING FOR NATIONAL FOREST LANDS, STATE PLANNING FOR STATE LANDS, AND LOCAL COUNTY FLOODPLAIN ZONING AND OTHER ZONING FOR PRIVATE LANDS ALONG THE RIVER ARE PROPOSED, IN LIEU OF INCLUSION IN THE NATIONAL WILD AND SCENIC RIVERS SYSTEM. NATIONAL FOREST LAND MANAGEMENT WOULD EMPHASIZE PROTECTION OF RIVER MANAGEMENT AREA VALUES AND PURSUE LAND EXCHANGE OPPORTUNITIES THAT WOULD YIELD ADDITIONAL PROTECTION AND MANAGEMENT EFFICIENCY. ON PRIVATE LANDS, BOUNDARY COUNTY WOULD PROVIDE PROTECTION OF RIVER MANAGEMENT AREA VALUES THROUGH OPPORTUNITIES OFFERED BY CURRENT COMPREHENSIVE PLANNING, ZONING, AND FLOODPLAIN ZONING EFFORTS. THE OPTION TO INCLUDE THE MOYIE RIVER IN ANY FUTURE STATE RIVER SYSTEM, AS PROPOSED IN THE IDAHO WATER PLAN, WOULD REMAIN AVAILABLE. (POS)MANAGEMENT ACTIONS WOULD SLIGHTLY INCREASE OPPORTUNITIES FOR THE MAINTENANCE AND IMPROVEMENT OF WATER QUALITY; REDUCE POTENTIAL FOR ACCELERATED SOIL EROSION AND SOIL LOSS; ENHANCE SCENIC VALUES AND NATIVE PLANT COMMUNITIES; AND BENEFIT EXISTING SCIENTIFIC, HISTORIC, AND ARCHAEOLOGICAL FEATURES. REDUCTION OF POTENTIAL FLOOD DAMAGE AND PROTECTION OF HUMAN LIFE WOULD RESULT FROM THE PROPOSED MANAGEMENT PLANS. LIVESTOCK GRAZING AND FORAGE PRODUCTION WOULD IMPROVE, AS WOULD RECREATION OPPORTUNITIES, TRANSPORTATION OF NATURAL GAS, AND EMERGENCY PREPAREDNESS. (NEG)FEDERAL INFLUENCE ON FLOODPLAIN ZONING AND LIMITATIONS ON FLOODPLAIN USES WOULD INCREASE. TWENTY-FIVE PERCENT FUND PAYMENTS TO COUNTIES WOULD BE REDUCED. TIMBER YIELDS WOULD DECREASE SLIGHTLY DUE TO REDUCED HARVESTS ON NATIONAL FOREST LAND. THE LOCAL TAX BASE ALSO WOULD DECLINE SLIGHTLY. (LEG)WILD AND SCENIC RIVERS ACT OF 1968 (16 U.S.C. 1271 ET SEQ.). (REF)FOR THE ABSTRACT OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT, SEE 78-1141D, VOLUME 2, NUMBER 10

0133

Municipal watershed management in Massachusetts--an economic development catalyst.

Archey, W.E. ; Mawson, J.C. Ithaca, N.Y. : The Center, Cornell University. Publication - Northeast Regional Center for Rural Development. Paper presented at a proceedings on "Community Economic Development," May 28-30, 1985, Amherst, Massachusetts, 1985. (40), p. 200-205. (NAL Call No.: DNAL HN90.C6N6).

0134

National forest policies for the future.
; Anderson, H. Michael.-Gehrke,
Craig.-Wilcove, David Samuel.-Carey,
Henry C.-Olson, Jeffrey T.-Rice, Richard
E. Washington, D.C. : Wilderness
Society, 1988-. v. : ill. : 28 cm.
Includes bibliographical references.
(NAL Call No.: DNAL SD426.N37).

0135

Nitrogen dynamics in stream wood samples incubated with (14C)lignocellulose and potassium (15N)nitrate.
APMBA. Aumen, N.G. ; Bottomley,
P.J.-Gregory, S.V. Washington, D.C. :
American Society for Microbiology.
Applied and environmental microbiology.
May 1985. v. 49 (5) p. 1119-1123.
Includes 24 references. (NAL Call No.:
DNAL 448.3 AP5).

0136

Nutrient budgets for agricultural watersheds in the southeastern coastal plain.
ECOLA. Lowrance, R.R. ; Leonard,
R.A.-Asmussen, L.E.-Todd, R.L. Tempe,
Ariz. : Ecological Society of America.
Ecology : a publication of the
Ecological Society of America. Feb 1985.
v. 66 (1). p. 287-296. ill., maps.
Includes references. (NAL Call No.: DNAL
410 EC7).

0137

Nutrient distributions in runoff from Ouachita Mountain watersheds (Soil erosion, forest management, effects on water quality, Arkansas).
Lawson, E.R.XFGSA. ; Hileman, L.H.
Asheville : The Station. USDA Forest
Service general technical report SE -
United States, Southeastern Forest
Experiment Station. Mar 1983.
Proceedings of the Second Biennial
Southern Silvicultural Research
Conference, Atlanta, 1982. Mar 1983.
(SE-24). p. 477-482. Includes
references. (NAL Call No.: aSD433.A53).

0138

Nutrient dynamics in an agricultural watershed: observations on the role of a riparian forest.
ECOLA. Peterjohn, W.T. ; Cornell, D.L.
Tempe, Ariz. : Ecological Society of
America. Ecology : a publication of the
Ecological Society of America. Oct 1984.
v. 65 (5). p. 1466-1475. ill., maps.
Includes references. (NAL Call No.: DNAL
410 EC7).

0139

Nutrient inputs and outputs in a forested and grassland catchment at Plynlimon, mid Wales.
AWMAD. Roberts, G. ; Hudson,
J.A.-Blackie, J.R. Amsterdam : Elsevier
Scientific. Agricultural water
management. Nov 1984. v. 9 (3). p.
177-191. maps. Includes references. (NAL
Call No.: DNAL S494.5.W3A3).

0140

On the spraying of sewage water in a forest. I. Preliminary research on stream-water chemicals (as fertilizer).
Iwatsubo, G. ; Tsutsumi, T. Tokyo, The
Society. Nihon Ringakukai shi. = Journal
of the Japanese Forestry Society. May
1982. v. 64 (5). p. 189-192. map. 8 ref.
(NAL Call No.: 99.8 N62).

0141

Opportunities for enhancing water yield, quality, and distribution in the Mountain West.
XGTIA. Ffolliott, P.F. ; Brooks, K.N.
Ogden, Utah : The Station. General
technical report INT - U.S. Department
of Agriculture, Forest Service,
Intermountain Research Station. Paper
presented at "Future Forests of the
Mountain West : A Stand Culture
Symposium," Sept 29-Oct 3, 1986,
Missoula, MT. Apr 1988. (243). p. 55-60.
Includes references. (NAL Call No.: DNAL
aSD11.A48).

0142

Organic debris in small streams, Prince of Wales Island, southeast Alaska Cleanup.
XFTRA. Swanson, F.J. ; Bryant,
M.D.-Lienkaemper, G.W.-Sedell, J.R.
Portland, Or. : The Station. USDA Forest
Service general technical report PNW -
United States, Pacific Northwest Forest
and Range Experiment Station. June 1984.
(166). 12 p. ill., maps. Includes
references. (NAL Call No.: DNAL
aSD11.A46).

0143

The outflow of macro- and microelements from the Niepolomice Forest watersheds.
Bednars, T. ; Bombowna, M.-Lewinski,
A.-Pasternak, K.-Reczynska-Dutka,
M.-Szlaga, J.-Trela, K.-Wrobel,
S.-Zygmuntowa, J. Berlin :
Springer-Verlag. Ecological studies :
analysis and synthesis. 1984. v. 49. p.
167-202. maps. (NAL Call No.: DNAL
QH540.E288).

0144

Oxidized nitrogen in precipitation, throughfall, and streamfall from a forested watershed in Oklahoma.
WARBA. Lawrence, S.J. ; Wigginton, P.J.
Jr. Minneapolis, Minn. : American Water
Resources Association. Water resources
bulletin. Dec 1987. v. 23 (6). p.
1069-1076. maps. Includes references.
(NAL Call No.: DNAL 292.9 AM34).

0145

The Palzo Project--water quality trends within a sludge-amended strip mine site.
McGuire, P.E. ; Spivey, M.R.-Mason, R.H.
Lexington, Ky. : OES Publications,
College of Engineering, University of
Kentucky, c1983. Proceedings. 1983
Symposium on Surface Mining, Hydrology,
Sedimentology and Reclamation, November
28-December 2, 1983 / editor, Donald H.
Graves. p. 57-66. maps. Includes 18
references. (NAL Call No.: DNAL
TS195.S75S95 1983).

Q146

Periphyton inventory and monitoring for water quality characterization in subarctic streams.

Hilgert, J.W. Bethesda, Md. : Society of American Foresters, c1984. Inventorying forest and other vegetation of the high latitude and high altitude regions : proceedings, Society of American Foresters Regional Tech. Conf., 23-26 July 1984, Fairbanks, Alaska / ed. V.J. p. 271-279. maps. Includes references. (NAL Call No.: DNAL SD551.564 1984).

Q147

Picloram movement in an Appalachian hardwood forest watershed.

JEVOAA. Neary, D.G. ; Bush, P.B.-Douglass, J.E.-Todd, R.L. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. Oct/Dec 1985. v. 14 (4). p. 585-592. maps. Includes references. (NAL Call No.: DNAL QH540.J6).

Q148

Picloram movement in soil solution and streamflow from a coastal plain forest.

JEVOAA. Michael, J.L. ; Neary, D.G.-Wells, M.J.M. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. Jan/Mar 1989. v. 18 (1). p. 89-95. maps. Includes references. (NAL Call No.: DNAL QH540.J6).

Picloram

(4-amino-3,5,6-trichloropicolinic acid) was aerially applied to a longleaf pine (*Pinus palustris* L.) site in the upper coastal plain of Alabama to control kudzu *Pueraria lobata* (Willd.) Ohwi. Pellets (10% a.i.) were spread at the rate of 56 kg ha⁻¹ on loamy sand Typic Kanhapludult soils. Movement of this herbicide was monitored with mineral soil samples, tension-cup lysimeters, flowproportional streamflow samplers, and discrete samplers. Picloram levels in the upper 15 cm of mineral soil peaked at 0.96 to 2.25 mg kg⁻¹ 25 d after application, depending on slope position, and declined to 0.13 to 0.29 mg kg⁻¹ 1 yr later. In soil solution, picloram was detected at a depth of 0.4 m between 26 and 273 d after application. Only 4 of 15 lysimeters consistently contained detectable residues. Maximum picloram levels in soil solution were 130, 450, and 191 mg m⁻³ for ridge, midslope, and toe-slope positions, respectively. Downstream monitoring began 4 d after the herbicide application, and an initial concentration of 68 mg m⁻³ of picloram was detected. The maximum downstream concentration of 77 mg m⁻³ occurred 18 d after the application. Immediately after the second storm event, downstream levels dropped to less than 10 mg m⁻³ after 90 d and to less than 2 mg m⁻³ after 200 d. Following localized retreatment along the stream more than a year after the initial treatment, levels climbed again into the 20 to 30 mg m⁻³ range. Most of the initial off-site movement came from a perennial stream the had been inadvertently treated, but subsequently storm runoff was the

largest contributor to stream contamination. Picloram residues in this stream were similar to those observed downstream, but they were higher (up to 241 mg m⁻³ and dropped faster to below 2 mg m⁻³ after D 150).

Q149

Pollution indicator bacteria in stream and potable water supply of the Manitou Experimental Forest, Colorado.

Erickson, D.C.XARRA. ; Gary, H.L.-Morrison, S.M.-Sanford, G. Fort Collins : The Station, USDA Forest Service research note RM - United States, Rocky Mountain Forest and Range Experiment Station. June 1982. June 1982. (RM-415). 7 p. 111. maps. Includes references. (NAL Call No.: A99.9 F7632US).

Q150

Potential for buffering of acidic precipitation by mineral weathering in a forested entisol.

SSSUD4. Li, C.S. ; Bockheim, J.G.-Leide, J.E.-Wentz, D.A. Madison, Wis. : The Society. Soil Science Society of America journal. July/Aug 1988. v. 52 (4). p. 1148-1154. Includes references. (NAL Call No.: DNAL 56.9 S03).

Bulk precipitation, soil-water, and groundwater chemistry were monitored at Round Lake, a small, forested catchment receiving acidic precipitation (pH 4.6) in northwestern Wisconsin. The groundwater basin retained H ion and released nonhydrolyzable cations (NHC = Ca, Mg, Na, K) and Si. The percentage of plagioclase feldspar, hornblende, olivine, and augite increased with depth in soils from the catchment; quartz, orthoclase feldspar, and weathered mica decreased with depth. Thermodynamic stability indices estimated from water-quality and mineralogic data, and from the WATEQF chemical speciation model indicate that the soil-water and groundwater are undersaturated with respect to hornblende, chlorite, olivine, augite, plagioclase, and orthoclase feldspars and that these minerals may be undergoing dissolution. Minimally disturbed soil cores were leached with dilute H₂SO₄ and distilled water (pH 3.0 to 5.7). When the pH of the extracting solution was greater than 4.5, Ca was released in the greatest amounts, followed by Si, Mg, K, Na, and Al. This ranking is similar to that for cations in groundwater. Leaching with a pH 3.0 solution released Si in the greatest amounts from the C horizon, followed by the Bw₂, Bw₁, and A + B/E horizons. This trend parallels the depth distribution of weatherable minerals in the very fine sand fraction. Results from the laboratory leaching study confirm the chemical modeling studies, indicating that mineral weathering (hydrolysis) can contribute to buffering within the groundwater basin at Round Lake.

0151

Predicting the effects of land disturbances on stream salinity in south-west Western Australia.

ASORAB. Schofield, N.J. East Melbourne : Commonwealth Scientific and Industrial Research Organization. Australian journal of soil research. 1988. v. 26 (2). p. 425-438. ill., maps. Includes references. (NAL Call No.: DNAL 56.8 AU7).

0152

Protecting forest streams during whole-tree harvesting.

Hornbeck, J.W. ; Martin, C.W.-Smith, C.T. Bethesda, Md. : Society of American Foresters. Northern journal of applied forestry. Sept 1986. v. 3 (3). p. 97-100. Includes references. (NAL Call No.: DNAL SD143.N6).

0153

Protecting Vermont lands and lakes : capsule report : executive summary of the special study agricultural runoff in selected Vermont watersheds / U.S. Department of Agriculture, Soil Conservation Service, Economic Research Service, Forest Service ; and Vermont Agency of Environmental Conservation, Vermont Department of Agriculture. -

(Burlington, Ver. (1 Burlington Square, Suite 205, Burlington, Ver. 05401) Soil Conservation Service) 1983. "February 1983.". 21 p. : ill., map ; 28 cm. Bibliography: p. 19-21. (NAL Call No.: ATD428.A37P76).

0154

Rapid dissipation of glyphosate in small forest ponds.

AECTCV. Goldsborough, L.G. ; Beck, A.E. New York, N.Y. : Springer-Verlag. Archives of environmental contamination and toxicology. July/Aug 1989. v. 18 (4). p. 537-544. Includes references. (NAL Call No.: DNAL TD172.A7).

0155

Recent increase in mercury sedimentation in a forest lake attributable to peatland drainage (Finland).

Simola, H.BECTA. ; Lodenius, M. New York : Springer-Verlag. Bulletin of environmental contamination and toxicology. Sept 1982. v. 29 (3). p. 298-305. ill. 2 p. ref. (NAL Call No.: RA1270.P35A1).

0156

The recharge-discharge function of wetlands near Juneau, Alaska. II. Geochemical investigations.

GRWAA. Siegel, D.I. Dublin, Ohio : Water Well Journal Publishers. Ground water. Sept/Oct 1988. v. 26 (5). p. 580-586. maps. Includes references. (NAL Call No.: DNAL TD403.G7).

0157

Recommended management practices for forested wetlands road construction.

KFGSA. Windsor, C.L. Asheville, N.C. : The Station. General technical report SE - U.S. Department of Agriculture, Forest Service. Southeastern Forest Experiment Station. Paper presented at a "Symposium

on the Forested Wetlands of the Southern United States," July 12-14, 1988. Orlando, Florida. Jan 1989. (50). p. 51-53. Includes references. (NAL Call No.: DNAL aSD433.A53).

0158

Reconnaissance investigation of sediment distribution, erosion, and transport in the Upper Deschutes River, Deschutes County, Oregon, November, 1986 / by Kenneth A. Cameron and Jon J. Major ; prepared in cooperation with the U.S. Forest Service.

Cameron, Kenneth A. ; Major, Jon J. Vancouver, Wash. : Dept. of the Interior, U.S. Geological Survey. Denver, Colo. : Books and Open-file Reports distributor, 1987. iv, 24 p. : ill., 1 map ; 28 cm. Bibliography: p. 19. (NAL Call No.: DNAL GB701.W375 no.87-4114).

0159

Red alder leaf litter and streamwater quality in western Oregon.

WARBA. Taylor, R.L. ; Adams, P.W. Minneapolis, Minn. : American Water Resources Association. Water resources bulletin. Aug 1986. v. 22 (4). p. 629-635. maps. Includes references. (NAL Call No.: DNAL 292.9 AM34).

0160

Relationship between atmospheric nitrogen deposition and the stream nitrogen profile.

JHYDA. Moore, I.D. ; Nuckols, J.R. Amsterdam : Elsevier Scientific. Journal of hydrology. Oct 1984. v. 74 (1/2). p. 81-103. maps. Includes references. (NAL Call No.: DNAL 292.8 J82).

0161

Release of aluminum following whole-tree harvesting at the Hubbard Brook Experimental Forest, New Hampshire.

JEVQAA. Lawrence, G.B. ; Fuller, R.D.-Driscoll, C.T. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. Oct/Dec 1987. v. 16 (4). p. 383-390. maps. Includes references. (NAL Call No.: DNAL QH540.U6).

0162

The research programme of the Scottish Development Department: projects concerned with the effects of land use on fresh waters.

Macdonald, T.D. Chichester, England : Published for the Water Research Centre by E. Horwood, 1986. Effects of land use on fresh waters : agriculture, forestry, mineral exploitation, urbanization / editor, J.F. de L.G. Solbe. p. 468-472. (NAL Call No.: DNAL TD423.E34).

0163

Residues from organic arsenical herbicides in chemically thinned forests.

JEVQAA. Newton, M. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. Oct/Dec 1986. v. 15 (4). p. 388-394. Includes references. (NAL Call No.: DNAL QH540.U6).

O164

Reuse of stabilization pond effluent for Citrus reticulata (orange), forest and road verge plants.

PGWTA. Kale, C.K. ; Bal, A.S. Oxford : Pergamon Press. Water science and technology : a journal of the International Association on Water Pollution Research. 1987. v. 19 (12). p. 307-315. maps. Includes references. (NAL Call No.: DNAL TD420.A1P7).

O165

Road effects and impacts--watershed.

Megahan, W.F. Denver, Colo. : Engineering, USDA Forest Service, 1985. Proceedings : Forest Transportation Symposium, December 11, 12, & 13, 1984, Casper, Wyoming / prepared by Engineering Staff Unit, USDA Forest Service, Rocky Mountain Region. p. 57-97. Includes references. (NAL Call No.: DNAL ASD389.F6 1984).

O166

RIVERSIDE-BLACK BAYOU WATERSHED PLAN FOR WATERSHED PROTECTION, FLOOD PREVENTION, AGRICULTURAL WATER MANAGEMENT, AND OTHER BENEFICIAL PURPOSES, BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI.

JACKSON, MISSISSIPPI DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE JUNE 1983 (EPA: JULY 5, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 86 PAGES. (NAL Call No.: 83-0431D).

(PUR)IMPLEMENTATION OF A FLOOD CONTROL AND LAND TREATMENT PROJECT IS PROPOSED WITHIN THE 192,300-ACRE RIVERSIDE-BLACK BAYOU WATERSHED IN WASHINGTON AND BOLIVAR COUNTIES OF WESTCENTRAL MISSISSIPPI. THE PROJECT AREA IS BOUND ON THE WEST BY THE MISSISSIPPI RIVER LEVEE AND ON THE NORTH AND EAST BY WILLIAMS BAYOU AND DEER CREEK. STRUCTURAL MEASURES OF THE PREFERRED PLAN WOULD INCLUDE 65 MILES OF CHANNEL ENLARGEMENT, 11 MILES OF CLEARING AND SHAPING, 51 MILES OF SIMPLE CLEARING, 4 MILES OF NEW CHANNEL EXCAVATION, AND INSTALLATION OF STABILIZATION MEASURES AND WATER CONTROL STRUCTURES ALONG 100 MILES OF CHANNEL. LAND TREATMENT MEASURES, WHICH WOULD BE INSTALLED WITH THE HELP OF 6.2 PERSON-YEARS OF TECHNICAL ASSISTANCE, WOULD INCLUDE CANTILEVER OVERFALL PIPES WITHIN ON-FARM DITCHES. WHERE CHANNELS INTERCEPT WETLANDS, WATER CONTROL STRUCTURES WOULD BE INSTALLED THROUGH LEVEES TO PREVENT DRAINAGE OF WETLANDS BELOW NORMAL LOW SUMMER LEVELS. FLOWAGE EASEMENTS WOULD BE REQUIRED FOR LAND AFFECTED BY LEVEES AND WATER CONTROL STRUCTURES. TECHNICAL ASSISTANCE WOULD BE PROVIDED FOR THE TREATMENT OF APPROXIMATELY 14,000 ACRES OF CONTINUOUS CROPS ON DUBBS, BOSKET, AND DUNDEE SOILS THROUGHOUT THE WATERSHED. MITIGATION FEATURES WOULD INCLUDE PLANTING OF PERMANENT TREES AND SHRUBS ON 80 ACRES ALONG CHANNEL BERMS AND SPOIL AREAS. ESTIMATED COST OF PROJECT INSTALLATION IS \$11.5 MILLION. AND THE BENEFIT-COST RATIO IS ESTIMATED AT 5.95. (POS)REDUCTION OF FLOODING AND

IMPROVEMENT OF DRAINAGE WOULD INCREASE THE EXTENT OF PRIME FARMLAND WITHIN THE WATERSHED FROM 136,500 ACRES TO 151,300 ACRES. PRODUCTIVITY OF COTTON, SOYBEAN, RICE, SMALL GRAIN, AND PASTURELAND WOULD INCREASE SIGNIFICANTLY. EROSION WOULD DECLINE 20 PERCENT, AND SEDIMENT ENTERING WATERSHED CHANNELS WOULD BE REDUCED BY 43,000 TONS PER YEAR. PROJECT BENEFITS WOULD BE WORTH \$6.7 MILLION ANNUALLY. (NEG)CONSTRUCTION ACTIVITIES AND PROJECT FEATURES WOULD RESULT IN THE LOSS OF 2,800 ACRES OF PRIME FARMLAND. GRASSLAND AND FORESTED ACREAGE

O167

Seasonal stream temperature changes following forest harvesting (Nonpoint source pollution).

Rishel, G.B. ; Lynch, J.A.-Corbett, E.S. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. Jan/Mar 1982. v. 11 (1). p. 112-116. 12 ref. (NAL Call No.: QH54O.J6).

O168

Sediment and nutrient discharge through streamflow from two experimental watersheds in mature oak-beech forest ecosystems near Istanbul, Turkey. JHYDA. Balci, A.N. ; Ozyuvaci, N.-Ozhan, S. Amsterdam : Elsevier Scientific Publishers, B.V. Journal of hydrology. June 15, 1986. v. 85 (1/2). p. 31-47. 111.. maps. Includes references. (NAL Call No.: DNAL 292.8 J82).

O169

Sediment and water yields from managed forests on flat coastal plain sites. WARBA. Beasley, R.S. ; Granillo, A.B. Minneapolis, Minn. : American Water Resources Association. Water resources bulletin. Apr 1988. v. 24 (2). p. 361-366. Includes references. (NAL Call No.: DNAL 292.9 AM34).

O170

Shenandoah watershed study: calibration of a topography-based, variable contributing area hydrological model to a small forested catchment. WRERA0. Hornberger, G.M. ; Beven, K.J.-Cosby, B.J.-Sappington, D.E. Washington, D.C. : American Geophysical Union. Water resources research. Dec 1985. v. 21 (12). p. 1841-1850. 111.. maps. Includes references. (NAL Call No.: DNAL 292.8 W295).

O171

Side-effects of experimental pyrethroid applications for the control of tsetseflies in a riverine forest habitat (Africa) (Glossina spp.). Everts, J.W.AECTCV. ; Frankenhuysen, K. van-Roman, B.-Koeman, J.H. New York : Springer-Verlag. Archives of environmental contamination and toxicology. Jan 1983. v. 12 (1). p. 91-97. 111.. maps. Includes references. (NAL Call No.: TD172.A7).

0172

Silviculture and best management practices.

Neuman, L. Pinole, Ca. : The Association. 1987? . Erosion control : you're gambling without it : proceedings of conference XVIII International Erosion Control Association, February 26 & 27, 1987, Reno, Nevada. p. 145-155. Includes references. (NAL Call No.: DNAL S623.I5 1987).

0173

Site preparation on forested wetlands of the southeastern coastal plain.

XFGSA. Williams, T.M. Asheville, N.C. : The Station. General technical report SE - U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station. Paper presented at a "Symposium on the Forested Wetlands of the Southern United States," July 12-14, 1988, Orlando, Florida. Jan 1989. (50). p. 67-71. (NAL Call No.: DNAL ASD433.A53).

0174

Soil and water quality.

XGTIA. McGregor, M.D. Ogden, Utah : The Station. USDA Forest Service general technical report INT - Intermountain Forest and Range Experiment Station. Apr 1985. (174). p. 44. (NAL Call No.: DNAL ASD11.A48).

0175

Soil processes and sulfate loss at the Hubbard Brook Experimental Forest.

BIOGEP. Nodvin, S.C. : Driscoll, C.T.-Likens, G.E. Dordrecht : Martinus Nijhoff/W. Junk Publishers. Biogeochemistry. 1988. v. 5 (2). p. 185-199. Includes references. (NAL Call No.: DNAL QH345.B564).

0176

Some economic benefits of protecting water quality.

Dissmeyer, G.E. : Foster, B. Bethesda, Md. : The Society. Proceedings of the... Society of American Foresters National Convention. 1986. p. 138-143. Includes references. (NAL Call No.: DNAL SD143.S64).

0177

Source areas contributing to the episodic acidification of a forested headwater stream.

JCOHE6. Potter, F.I. III. : Lynch, J.A.-Corbett, E.S. Amsterdam : Elsevier. Journal of contaminant hydrology. In the series analytic : Rapid and far-reaching hydrologic processes in the vadose zone / edited by P.F. Germann. Dec 1988. v. 3 (2/4). p. 293-305. maps. Includes references. (NAL Call No.: DNAL TD426.J68).

0178

Sources of acidity during snowmelt at a forested site in the west-central Adirondack Mountains, New York.

Peters, N.E. : Driscoll, C.T. Wallingford, Oxfordshire : IAHS Press. 1987. Forest hydrology and watershed management / edited by R.H. Swanson, P.Y. Bernier & P.D. Woodard. Paper

presented at the "Vancouver Symposium," August, 1987, Vancouver, British Columbia, Canada. p. 99-108. Includes references. (NAL Call No.: DNAL G8842.F67).

0179

Sources of alkalinity in precambrian shield watersheds under natural conditions and after fire or acidification.

Bayley, S.E. : Schindler, D.W. Berlin, W. Ger. : Springer-Verlag. N.A.T.O. A.S.I. (Advanced Study Institute) series. Series G. Ecological sciences. In the series analytic : Effects of Atmospheric Pollutants on Forests, Wetlands and Agricultural Ecosystems / edited by T.C. Hutchinson and K.M. Meema. Proceedings of a Workshop, May 12-17, 1985, Toronto, Canada. 1987. v. 16. p. 531-548. maps. Includes references. (NAL Call No.: DNAL QH540.N3).

0180

The status of silvicultural nonpoint source programs.

Ice, G.G. Washington, D.C. : U.S. Environ Protection Agency. Office of Water Regul and Standards. 1985. Perspectives on nonpoint source pollution : proceedings of a national conference, Kansas City, Missouri, May 19-22, 1985. p. 223-226. maps. Includes references. (NAL Call No.: DNAL TD223.P39).

0181

Storm runoff and water quality in an undisturbed forested catchment in Victoria (Eucalyptus regnans).

Finlayson, B.L. : Wong, N.R. Melbourne : CSIRO. Australian forest research. 1982. v. 12 (4). p. 303-315. maps. Includes references. (NAL Call No.: 99.8 AU76).

0182

Stream chemistry responses to disturbances.

Swank, W.T. New York, N.Y. : Springer-Verlag. Ecological studies : analysis and synthesis. In the series analytic: Forest hydrology and ecology at Coweeta / edited by W.T. Swank and D.A. Crossley, Jr. Proceedings of a symposium held in October 1984, Athens, Georgia. 1988. v. 66. p. 339-357. (NAL Call No.: DNAL QH540.E288).

0183

Streamside habitats in southern forested wetlands: their role and implications for management.

XFGSA. Howard, R.J. : Allen, J.A. Asheville, N.C. : The Station. General technical report SE - U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station. Paper presented at a "Symposium on the Forested Wetlands of the Southern United States," July 12-14, 1988, Orlando, Florida. - Literature review. Jan 1989. (50). p. 97-106. ill. Includes references. (NAL Call No.: DNAL ASD433.A53).

O184

Streamside management units in the Pacific Northwest.

Swank, G.W. Fort Collins, Colo. : The Station. General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona, 1985. (120). p. 435-438. (NAL Call No.: DNAL ASD11.A42).

O185

Sulfate-enriched water effects on a floodplain forest in Florida.

Richardson, J.EMNGD. ; Straub, P.A.-Carter Ewel, K.-Odum, H.T. New York : Springer International. Environmental management. July 1983. v. 7 (4). p. 321-326. ill., maps. Includes references. (NAL Call No.: HC79.E5E5).

O186

Surface runoff from southeastern Oklahoma forested watersheds.

POASA, Rochelle, B.P. ; Wigginton, P.J. Jr. Oklahoma City, Okla. : The Academy. Proceedings of the Oklahoma Academy of Science. 1986. v. 66. p. 7-13. maps. Includes references. (NAL Call No.: DNAL 500 DK42).

O187

Survival and distribution of *Yersinia enterocolitica* in a tropical rain forest stream.

CUMIDD, Elias-Montalvo, E.E. ; Calvo, A.-Hazen, T.C. New York, N.Y. : Springer International. Current microbiology. Feb 1989. v. 18 (2). p. 119-126. maps. Includes references. (NAL Call No.: DNAL QR1.C78).

O188

Suspended and dissolved sediment concentrations of two disturbed lowland forested watersheds in Air Hitam Forest Reserve, Selangor.

PERTD, Lai, F.S. ; Samsuddin, M. Serdang, Malaysia : Universiti Pertanian Malaysia. Pertanika. Apr 1985. v. 8 (1). p. 115-122. Includes references. (NAL Call No.: DNAL S19.P4).

O189

Suspended sediment and turbidity following road construction and logging in western Montana.

WARBA, Anderson, B. ; Potts, D.F. Minneapolis, Minn. : American Water Resources Association. Water resources bulletin. Aug 1987. v. 23 (4). p. 681-690. maps. Includes references. (NAL Call No.: DNAL 292.9 AM34).

O190

Tackling agricultural pollution--the difficulties facing conservationists in Great Britain.

Newbold, C. ; Fry, G.-Cooke, A. Chichester, England : Published for the Water Research Centre by E. Horwood, 1986. Effects of land use on fresh waters : agriculture, forestry, mineral exploitation, urbanization / editor, J.F. de L.G. Solbe. p. 296-314. Includes

references. (NAL Call No.: DNAL TD423.E34).

O191

Temporal variation in nitrate and nutrient cations in drainage waters from a deciduous forest.

JEVQAA, Foster, N.W. ; Nicolson, J.A.-Hazlett, P.W. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. Apr/June 1989. v. 18 (2). p. 238-244. Includes references. (NAL Call No.: DNAL QH540.U6). Temporal variations in soil solution and stream chemistry were examined in 1984 in an undisturbed sugar maple-yellow birch (*Acer saccharum* Marsh.-*Betula alleghaniensis* Britton) forest in the Turkey Lakes Watershed, Ontario. Nitrate was the dominant anion associated with cation depletion from soil. Nitrogen in precipitation was less important than soil N in the determination of solution chemistry. Growing-season increases in NH_4 and NO_3 in soil solution were greatest in the Oe horizon and decreased with depth. Nitrate concentrations in mineral soil solution and streamwater were highest during the dormant period and peaked at the start of spring snowmelt. Although NO_3 concentrations in streamwater were positively correlated ($r = 0.7-0.9$) with NO_3 and Ca^{2+} concentrations in mineral soil solution during the dormant period, NO_3 contributed far less to cation fluxes in streamwater than HCO_3 or SO_4 (2/4).

O192

Three-component tracer model for stormflow on a small Appalachian forested catchment.

JHYDA, Dewalle, D.R. ; Swistock, B.R.-Sharpe, W.E. Amsterdam : Elsevier Scientific Publishers. B.V. Journal of hydrology. Dec 30, 1988. v. 104 (1/4). p. 301-310. Includes references. (NAL Call No.: DNAL 292.8 J82).

O193

Timber and tourists: Idaho confronts logging issues.

Wann, D. Washington, D.C. : Office of Public Awareness. EPA Environmental Protection Agency journal. Dec 1987. v. 13 (10). p. 20-22. ill. Includes references. (NAL Call No.: DNAL TD171.U5).

O194

Timber harvesting and water quality in the Bull Run Municipal Watershed (in Oregon's Mount Hood National Forest).

Frear, S.T. Fort Collins : The Service. Forestry research west - United States, Forest Service. June 1982. June 1982. p. 4-7. ill. Includes references. (NAL Call No.: ASD11.F6).

O195

Transport of road-surface sediment through ephemeral stream channels.

WARBA, Duncan, S.H. ; Bilby, S.H.-Ward, J.W.-Heffner, J.T. Minneapolis, Minn. : American Water Resources Association. Water resources bulletin. Feb 1987. v. 23 (1). p. 113-119. Includes references. (NAL Call No.: DNAL 292.9 AM34).

0196

Trends in streamwater chemistry and input-output balances, Fraser Experimental Forest, Colorado.

XFRMA. Stottlemeyer, R.; Troendle, C. Fort Collins, Colo.: The Station, USDA Forest Service research paper RM - United States, Rocky Mountain Forest and Range Experiment Station, May 1987. (275). 9 p. Includes references. (NAL Call No.: DNAL A99.9 F7632U).

0197

TURKEY-CLAY CREEK WATERSHED PLAN, SOUTH DAKOTA.

HURON, SOUTH DAKOTA DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE JANUARY 1983 (EPA: FEBRUARY 2, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 147 PAGES. (NAL Call No.: 83-0167F). (PUR)IMPLEMENTATION OF A WATERSHED PROTECTION AND FLOOD PREVENTION PROJECT WITHIN THE 252-SQUARE-MILE TURKEY-CLAY CREEK WATERSHED IN CLAY, HUTCHINSON, TURNER, AND YANKTON COUNTIES IN SOUTHEASTERN SOUTH DAKOTA IS PROPOSED. THE PROJECT WOULD INCLUDE MODIFICATION OF 10.2 MILES OF MAIN CHANNEL AND 55.3 MILES OF LATERALS, CONSTRUCTION OF 9 FLOODWATER-RETARDING DAMS, AND EXCAVATION OF 9 SEDIMENT BASINS. FLOODWATER RETARDING DAMS WOULD BE PLACED SO AS TO CONTROL RUNOFF FROM 116.5 SQUARE MILES OF LAND WITHIN THE WATERSHED. ALL STRUCTURES WOULD BE ROLLED EARTH EMBANKMENTS WITH HEIGHTS RANGING FROM 31 TO 56 FEET, AND EACH STRUCTURE WOULD HAVE AN EXPECTED DESIGN LIFE OF 100 YEARS. PRINCIPAL SPILLWAY INLETS WOULD BE REINFORCED CONCRETE. THE CAPACITY OF MODIFIED MAIN CHANNEL WOULD ALLOW REMOVAL OF THE ONE-YEAR FREQUENCY STORM RUNOFF WITHIN A 24-HOUR PERIOD. MITIGATION OF WILDLIFE LOSSES RESULTING FROM PROJECT ACTIVITIES WOULD INVOLVE ACQUISITION AND MANAGEMENT OF 126 ACRES OF HERBACEOUS AND 23 ACRES OF WOODY HABITAT. DEVELOPMENT ON THESE TRACTS WOULD INCLUDE THE ESTABLISHMENT OF 21 ACRES OF HERBACEOUS HABITAT AND 34 ACRES OF WOODY HABITAT. ESTIMATED COST OF THE PROJECT, WHICH WOULD BE IMPLEMENTED OVER A 10-YEAR PERIOD, IS \$10.3 MILLION, AND THE BENEFIT-COST RATIO IS ESTIMATED AT 1.5. (POS)WITH PROJECT MEASURES IN PLACE, FLOOD DAMAGES WOULD BE REDUCED BY 72 PERCENT AND SEDIMENT LEAVING THE WATERSHED VIA THE VERMILLION RIVER WOULD BE REDUCED BY 50 PERCENT. SEDIMENT REDUCTION WOULD IMPROVE FISH AND WILDLIFE HABITAT AND REDUCE THE MAINTENANCE NEEDED FOR CHANNELS, LATERALS, BRIDGES, DITCHES, AND CULVERTS. AN ESTIMATED 17,800 ACRES SERVED BY THE LATERALS WOULD BENEFIT FROM INSTALLATION OF ON-FARM DRAINAGE STRUCTURES. APPROXIMATELY 560 ACRES OF PRIME FARMLAND WOULD BE ADDED TO THE WATERSHED AS A RESULT OF FLOOD REDUCTION AND IMPROVED DRAINAGE. WET SEDIMENT POOLS WOULD PROVIDE 88 SURFACE ACRES OF WATER AT 14 LOCATIONS. (NEG)INSTALLATION OF DAMS AND CHANNEL MODIFICATION WOULD RESULT IN A

0198

TWIN-RUSH CREEK WATERSHED, WASHINGTON COUNTY, INDIANA.

INDIANAPOLIS, INDIANA DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE APRIL 1983 (EPA: APRIL 15, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 67 PAGES. (NAL Call No.: 83-0274F).

(PUR)IMPLEMENTATION OF A FLOOD CONTROL AND LAND MANAGEMENT PLAN FOR THE 28,099-ACRE TWIN-RUSH CREEK WATERSHED OF WASHINGTON COUNTY, INDIANA IS PROPOSED. THE WATERSHED, WHICH LIES IN SOUTHEASTERN INDIANA APPROXIMATELY SIX MILES NORTHWEST OF SALEM, CONTAINS, 6,570 ACRES OF CROPLAND, 5,464 ACRES OF GRASSLAND, 14,679 ACRES OF FOREST, AND 1,386 ACRES OF OTHER LAND. THE PLAN WOULD INCLUDE EXCAVATION OF 7.2 MILES OF SINGLE-PURPOSE FLOOD PREVENTION CHANNEL AND IMPLEMENTATION OF ACCELERATED LAND TREATMENT MEASURES. CHANNEL EXCAVATION WOULD OCCUR IN LOW-PLASTICITY SILTS AND CLAYS, REQUIRING ARMORING OF THE CHANNEL BOTTOM AND BANKS TO ENSURE STABILITY. ALL DETERIORATED OR DAMAGED OUTLET STRUCTURES AND SUBSURFACE DRAINS WOULD BE REPAIRED OR REPLACED. EXCAVATION WOULD REQUIRE ACQUISITION OF PERMANENT EASEMENTS ON 157 ACRES AND TEMPORARY EASEMENTS ON 130 ACRES. SEDIMENT TRAPS WOULD BE INSTALLED ALONG THE CHANNELS AT INTERVALS OF NO GREATER THAN ONE MILE. FENCING WOULD BE INSTALLED AT THE EDGE OF THE BUFFER STRIP WHERE LIVESTOCK DAMAGE TO THE CHANNEL AND BUFFER AREAS COULD OCCUR. TO MITIGATE DAMAGE TO WILDLIFE HABITAT AND SENSITIVE AREAS, THE PROJECT WOULD INCLUDE A MITIGATION PLAN THAT WOULD INVOLVE ESTABLISHMENT OF 38 ACRES OF WOODY VEGETATION ALONG THE CHANNEL AND ESTABLISHMENT OF 32 ACRES OF GRASSES AND LEGUMES ON THE CHANNEL MAINTENANCE TRAVELWAY AND INSIDE SLOPE OF THE SPOIL AREA. IN ADDITION, 48 ACRES OF EXISTING VEGETATION AND ASSOCIATED HABITAT WOULD BE PROTECTED BY EASEMENTS, AND A DAM WOULD BE CONSTRUCTED TO CREATE A 600-FOOT IMPOUNDMENT TO MITIGATE THE LOSS OF WETLAND. ELEVEN CUTOFF OXBOWS WOULD HAVE PROVISIONS FOR DIVERTING SOME FLOWAGE TO PROVIDE REFUGE FOR FISH AND WILDLIFE DURING STORM FLOWS. ADDITIONAL MINOR MITIGATION MEASURES WOULD BE INCORPORATED INTO THE PROJECT. ESTIMATED COST OF THE PROJECT IS \$11.2 MILLION. (POS)APPROXIMATELY 1,524 ACRES, FLOODED DURING A 50-YEAR FREQUENCY FLOOD, WOULD BENEFIT FROM REDUCED FLOODING. FOR A TWO-YEAR FREQUENCY FLOOD, APPROXIMA

0199

TWIN-RUSH CREEK WATERSHED, WASHINGTON COUNTY, INDIANA.

INDIANAPOLIS, INDIANA DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE NOVEMBER 1982 (EPA: DECEMBER 1, 1982). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 47 PAGES. (NAL Call No.: 83-0039D). (PUR)IMPLEMENTATION OF A FLOOD-CONTROL

AND LAND-MANAGEMENT PLAN FOR THE 28,099-ACRE TWIN-RUSH CREEK WATERSHED OF WASHINGTON COUNTY, INDIANA IS PROPOSED. THE WATERSHED, WHICH LIES IN SOUTHEASTERN INDIANA APPROXIMATELY SIX MILES NORTHWEST OF SALEM, CONTAINS 6,570 ACRES OF CROPLAND, 5,464 ACRES OF GRASSLAND, 14,679 ACRES OF FOREST, AND 1,386 ACRES OF OTHER LAND. THE PLAN WOULD INCLUDE EXCAVATION OF 7.2 MILES OF SINGLE-PURPOSE FLOOD PREVENTION CHANNEL AND IMPLEMENTATION OF ACCELERATED LAND-TREATMENT MEASURES. CHANNEL EXCAVATION WOULD OCCUR IN LOW-PLASTICITY SILTS AND CLAYS, REQUIRING ARMORING OF THE CHANNEL BOTTOM AND BANKS TO ENSURE STABILITY. ALL DETERIORATED OR DAMAGED OUTLET STRUCTURES AND SUBSURFACE DRAINS WOULD BE REPAIRED OR REPLACED. EXCAVATION WOULD REQUIRE ACQUISITION OF PERMANENT EASEMENTS ON 157 ACRES AND TEMPORARY EASEMENTS ON 130 ACRES. SEDIMENT TRAPS WOULD BE INSTALLED ALONG THE CHANNELS AT INTERVALS OF NO GREATER THAN ONE MILE. FENCING WOULD BE INSTALLED AT THE EDGE OF THE BUFFER STRIP WHERE LIVESTOCK DAMAGE TO THE CHANNEL AND BUFFER AREAS COULD OCCUR. TO MITIGATE DAMAGE TO WILDLIFE HABITAT AND SENSITIVE AREAS, THE PROJECT WOULD INCLUDE A MITIGATION PLAN THAT WOULD INVOLVE ESTABLISHMENT OF 38 ACRES OF WOODY VEGETATION ALONG THE CHANNEL AND ESTABLISHMENT OF 32 ACRES OF GRASSES AND LEGUMES ON THE CHANNEL MAINTENANCE TRAVELWAY AND INSIDE SLOPE OF THE SPOIL AREA. IN ADDITION, 48 ACRES OF EXISTING VEGETATION AND ASSOCIATED HABITAT WOULD BE PROTECTED BY EASEMENTS, AND A DAM WOULD BE CONSTRUCTED TO CREATE A 600-FOOT IMPOUNDMENT TO MITIGATE THE LOSS OF WETLAND. ELEVEN CUTOFF OXBOWS WOULD HAVE PROVISIONS FOR DIVERTING SOME FLOWAGE TO PROVIDE REFUGE FOR FISH AND WILDLIFE DURING STORM FLOWS. ADDITIONAL MINOR MITIGATION MEASURES WOULD BE INCORPORATED INTO THE PROJECT. ESTIMATED COST OF THE PROJECT IS \$11.2 MILLION. (POS) APPROXIMATELY 1,524 ACRES, FLOODED DURING A 50-YEAR FREQUENCY FLOOD, WOULD BENEFIT FROM REDUCED FLOODING. FOR A TWO-YEAR FREQUENCY FLOOD, APPROXIMATE

0200

U.S. Department of Agriculture's perspective on silvicultural nonpoint source water quality.

Beasley, J.L. ; Harper, W.C. Washington, D.C. : U.S. Environ Protection Agency, Office of Water Regul and Standards, 1985. Perspectives on nonpoint source pollution : proceedings of a national conference, Kansas City, Missouri, May 19-22, 1985. p. 321-324. (NAL Call No.: DNAL TD223.P39).

0201

UPPER CHESTER RIVER WATERSHED PLAN, MARYLAND AND DELAWARE.

AND DOVER, DELAWARE DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, COLLEGE PARK, MARYLAND JULY 1982 (EPA: JULY 16, 1982). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 221 PAGES. (NAL Call No.: 82-0612F).

(PUR) CHANNEL EXCAVATION AND LAND TREATMENT WITHIN THE 90,500-ACRE UPPER CHESTER RIVER WATERSHED IN KENT AND QUEEN ANNE'S COUNTIES, MARYLAND, AND IN KENT AND NEW CASTLE COUNTIES, DELAWARE ARE PROPOSED TO SOLVE AGRICULTURAL FLOODING AND DRAINAGE PROBLEMS. THE PROJECT WOULD INVOLVE PROVISION OF 18.5 PERSON-YEARS OF TECHNICAL ASSISTANCE TO ACCELERATE THE PLANNING AND APPLICATION OF LAND-TREATMENT MEASURES AND INSTALLATION OF 97 MILES OF CHANNEL WORK OVER A SEVEN-YEAR PERIOD. CHANNEL WORK WOULD INVOLVE CLEARING AND SHAPING OR ENLARGING 17.5 MILES OF PERENNIAL STREAMS, 67.5 MILES OF EPHEMERAL STREAMS, AND 12 MILES OF INTERMITTENT STREAMS. THE LAND-TREATMENT COMPONENT OF THE PROJECT WOULD INCLUDE 302,000 FEET OF HEDGEROW PLANTING, 2.0 MILLION FEET OF FIELD DITCH EXCAVATION, AND MANAGEMENT OF 1,860 ACRES OF WETLAND HABITAT AND 5,500 ACRES OF FOREST. THE PROGRAM WOULD TREAT 14,600 ACRES OF CROPLAND USING REDUCED TILLAGE SYSTEMS AND COVER CROPS. ESTIMATED COST OF THE PROJECT IS \$5.1 MILLION, AND THE ESTIMATED BENEFIT-COST RATIO IS 1.9. (POS) CHANNEL WORK AND LAND-TREATMENT MEASURES WOULD REDUCE FLOOD DAMAGES AND IMPROVE DRAINAGE ON 9,400 ACRES OF WET CROPLAND AND 5,200 ACRES OF INTERDEPENDENT NONWET CROPLAND, REDUCE EROSION ON AND SEDIMENT PRODUCED BY 14,600 ACRES OF CROPLAND, IMPROVE MANAGEMENT ON 3,700 ACRES OF FOREST LAND, AND IMPROVE WILDLIFE HABITAT WITHIN THE WATERSHED. THE AMOUNT OF PRIME FARMLAND WOULD INCREASE BY 9,400 ACRES. OF THE 250 FARM UNITS WITHIN THE WATERSHED, 120 WOULD BENEFIT FROM LAND-TREATMENT MEASURES AND 100 WOULD BENEFIT FROM STRUCTURAL MEASURES. (NEG) APPROXIMATELY 525 ACRES OF WOODED FLOODPLAIN AND ASSOCIATED WILDLIFE HABITAT WOULD BE CHANGED TO OPEN CHANNEL AND HERBACEOUS GROWTH AND BRUSH. PROJECT ACTIVITIES WOULD RESULT IN A NET LOSS OF 118 ACRES OF WETLAND. APPROXIMATELY 9.8 MILES OF EXISTING HEDGEROW WOULD BE REPLACED BY HERBACEOUS STRIPS, AND 75 ACRES OF CROPLAND WOULD BE CHANGED TO HERBACEOUS GROWTH AND BRUSH. EXCAVATION OF STREAMS WOULD DISRUPT

0202

UPPER YOCONA RIVER WATERSHED, LAFAYETTE, CALHOUN, AND PONTOTOC COUNTIES, MISSISSIPPI.

JACKSON, MISSISSIPPI DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE MARCH 1982 (EPA: APRIL 28, 1982). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 2 VOLUMES. (NAL Call No.: 82-0395F).

(PUR) IMPLEMENTATION OF LAND-TREATMENT MEASURES, MODIFICATION OF 42.1 MILES OF CHANNEL, AND INSTALLATION OF WATER CONTROL STRUCTURES WITHIN THE 105,835-ACRE UPPER YOCONA RIVER WATERSHED IN LAFAYETTE, PONTOTOC, AND CALHOUN COUNTIES, MISSISSIPPI ARE PROPOSED. TECHNICAL ASSISTANCE WOULD BE PROVIDED TO AID LANDOWNERS IN IMPLEMENTATION OF REMAINING

LAND-TREATMENT MEASURES, WHICH INCLUDE CONSERVATION CROPPING SYSTEMS, PASTURE PLANTING AND RENOVATION, DIVERSIONS, FARM PONDS, GRASSED WATERWAYS, TREE PLANTING, AND WOODLAND MANAGEMENT. CHANNEL WORK WOULD CONSIST OF 41 MILES OF CHANNEL ENLARGEMENT OR REALIGNMENT AND 1.1 MILES OF CLEARANCE OF NATURAL CHANNEL. CHANNEL CLEARANCE OPERATIONS WOULD BE CONDUCTED ON THE EXTREME UPPER PORTIONS OF THE VOCONA RIVER AND TOCCOPOLA CREEK. NUMEROUS OXBOWS AND BENDS WOULD BE CUT OFF AS CHANNEL ENLARGEMENT OR REALIGNMENT WORK FOLLOWED THE GENERAL PATTERN OF FLOW. CLEARANCE ACTIVITIES WOULD CONSIST OF REMOVAL OF WOODY GROWTH, DEBRIS, AND DRIFTS FROM THE CHANNEL WATER FLOW AREA. CHANNEL WORK AND APPURTENANCES WOULD INCLUDE CHANNEL EXCAVATION AND CLEARANCE, PLACEMENT OF RIPRAP FOR GRADE CONTROL, INSTALLATION OF PIPE DROPS AND CONCRETE GRADE CONTROL STRUCTURES, INSTALLATION OF CANTILEVER OVERFALL PIPES, INSTALLATION OF WATER LEVEL CONTROL STRUCTURES, STREAMBANK STABILIZATION, AND EXCAVATION OF INLET CHANNELS. AN AREA OF APPROXIMATELY 25 ACRES LOCATED SOUTH OF VOCONA RIVER WOULD BE ESTABLISHED FOR USE AS A WILDLIFE HABITAT AREA DURING THE WINTER SEASON, AND NUMEROUS OTHER MITIGATION FEATURES WOULD BE INCORPORATED INTO THE PLAN. A BRIDGE OVER POTLOCKNEY CREEK AT THE LOWER COUNTY ROAD CROSSING WOULD BE ALTERED. ESTIMATED COST OF THE PROJECT IS \$17.3 MILLION. (PCS) LAND-TREATMENT MEASURES WOULD IMPROVE HYDROLOGIC CONDITIONS, REDUCE RUNOFF, PREVENT EROSION, PROVIDE OUTLETS FOR ON-FARM DRAINS, AND ENHANCE THE AESTHETIC VALUES OF THE WATERSHED. COMPLETION OF THE PROJECT WOULD REDUCE FLOODWATER DAMAGES ON 13,567 ACRES BY 66 PERCENT AND IMPROVE RUNOFF ON 13.

0203

The use of the paired-basin technique in flow-related wildland water-quality studies /by Stanley L. Ponce, David W. Schindler, Robert C. Averett.
Ponce, Stanley L. ; Schindler, David, W.-Averett, R. C. Fort Collins, Colo. : USDA Forest Service, Watershed Systems Development Group, 1982. Cover title. "April 1982". 21 p. : ill. ; 28 cm.
Bibliography: p. 20-21. (NAL Call No.: DNAL TD367.P6).

0204

Valuation of tidal wetlands (Saltmarshes, tidal swamps, swamp forests).

Burbridge, P.R. Bangkok : The Agricultural Development Council, 1982.
Man, land and sea : coastal resource use and management in Asia and the Pacific / edited by Chandra H. Soysa, Chia Lin Sien, and William L. Collier. p. 43-64. 5 p. ref. (NAL Call No.: QH541.5.C65M3).

0205

Value of forested wetlands as filters for sediments and nutrients.

XFGSA. Kuenzler, E.J. Asheville, N.C. : The Station. General technical report SE - U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment

Station. Paper presented at a "Symposium on the Forested Wetlands of the Southern United States," July 12-14, 1988, Orlando, Florida. Jan 1989. (50). p. 85-96. ill. (NAL Call No.: DNAL ASD433.A53).

0206

Water in forests (Acid rain, hydrology, Scotland).

Miller, H.G. Edinburgh : Royal Scottish Forestry Society. Scottish forestry. July 1984. v. 38 (3). p. 165-181. ill. Includes references. (NAL Call No.: 99.8 SC03).

0207

Water quality and yield from the intensively managed forest.

Nutter, W.L. PSFA. Washington : The Society. Proceedings of the Society of American Foresters. 1981 (pub. 1982). 1981 (pub. 1982). p. 89-93. Includes references. (NAL Call No.: 99.9 SO13).

0208

Water quality changes associated with forest drainage and pine plantation establishment.

Williams, T.M. ; Askew, G.R. New Orleans, La. : The Station. Forest Service general technical report SO - United States, Southern Forest Experiment Station. Paper presented at the "Third Biennial Southern Silvicultural Research Conference," November 7/8, 1984, Atlanta, Georgia. Apr 1985. (54). p. 536-549. ill. Includes references. (NAL Call No.: DNAL ASD11.U57).

0209

Water quality effects of clearcutting upper coastal plain loblolly pine plantations.

JEVQAA. McClurkin, D.C. ; Duffy, P.D.-Ursic, S.J.-Nelson, N.S. Madison, Wis. : American Society of Agronomy. Journal of environmental quality. July/Sept 1985. v. 14 (3). p. 329-332. Includes references. (NAL Call No.: DNAL QH540.J6).

0210

Water quality effects of pine flatwoods silviculture.

JSWCA3. Riekerk, H. Ankeny, Iowa : Soil Conservation Society of America. Journal of soil and water conservation. May/June 1985. v. 40 (3). p. 306-309. Includes 14 references. (NAL Call No.: DNAL 56.8 J822).

0211

Water quality generating processes on a forested watershed.

Turton, D.J. ; Haan, C.T.-Miller, E.L. St. Joseph, Mich. : The Society. American Society of Agricultural Engineers (Microfiche collection). Paper presented at the 1988 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. 1988. (fiche no.

88-2079). 24 p. ill., maps. Includes references. (NAL Call No.: DNAL FICHE S-72).

Q212

Water quality in relation to sludge and wastewater applications to forest land. Zasoski, R.J. ; Edmonds, R.L. Seattle : University of Washington Press, 1986. The Forest alternative for treatment and utilization of municipal and industrial wastes / edited by Dale W. Cole, Charles L. Henry, and Wade L. Nutter. p. 100-109. ill. Includes references. (NAL Call No.: DNAL TD897.F65).

Q213

Water quality in south Arkansas forests. Beasley, R.S. New York : American Society of Civil Engineers, c1982. Proceedings of the Specialty Conference on Environmentally Sound Water and Soil Management : Orlando, Fla., July 20-23, 1982 / E.G. Kruse, C.R. Burdick, and Y.A. Yousef, co-editors. p. 49-56. Includes references. (NAL Call No.: TC803.S64 1982).

Q214

Water quality laws affecting forestry in the eastern United States.

Cubbage, F.W. ; Siegel, W.C.-Haines, T.K. Bethesda, Md. : The Association. American Water Resources Association technical publication series TPS. Paper presented at the "Symposium on Monitoring, Modeling, and Mediating Water Quality," May 1987. 1987. (87-2). p. 597-609. Includes references. (NAL Call No.: DNAL TC401.A5).

Q215

A water quality monitoring framework to satisfy legal requirements.

Solomon, R.M. ; Avers, P.E. Bethesda, Md. : The Association. American Water Resources Association technical publication series TPS. Paper presented at the "Symposium on Monitoring, Modeling, and Mediating Water Quality," May 1987. 1987. (87-2). p. 231-242. Includes references. (NAL Call No.: DNAL TC401.A5).

Q216

Water quality of ephemeral forest streams after site preparation with the herbicide hexazinone.

FECMDW. Neary, D.G. ; Bush, P.B.-Grant, M.A. Amsterdam : Elsevier. Forest ecology and management. Jan 1986. v. 14 (1). p. 23-40. maps. Includes references. (NAL Call No.: DNAL SD1.F73).

Q217

Water quality of stormflows from hardwood forested catchments in the Boston Mountains.

Lawson, E.R. ; Rogerson, T.L.-Hileman, L.H. Urbana-Champaign : Dept. of Forestry, University of Illinois, 1985. Fifth Central Hardwood Forest Conference : proceedings of a meeting held at the University of Illinois at Urbana-Champaign, Illinois, April 15-17, 1985 / edited by Jeffrey O. Dawson and Kimberly A. Majerus. p. 215-221.

Includes references. (NAL Call No.: DNAL SD397.H3C46 1985).

Q218

Water quality studies of six bogs on the inner coastal plain of Maryland.

Whigham, D.F. Boulder, Colo. : Westview Press, 1987. Atlantic white cedar wetlands / edited by Aimlee D. Laderman. Paper presented at the First Atlantic White Cedar Wetlands Symposium, held at the Marine Biological Laboratory, Woods Hole, Massachusetts, October, 1984. p. 85-90. Includes references. (NAL Call No.: DNAL QK938.M3A8).

Q219

Water resources in the southern Rockies and high plains forest recreational use and aquatic life / Loren D. Potter, James R. Gosz, Clarence A. Carlson, Jr. --. Potter, Loren D. ; Gosz, James R.-Carlson, Clarence A. Albuquerque : University of New Mexico Press, c1984. Includes index. xvi, 331 p. : ill., maps : 24 cm. --. Bibliography: p. 309-329. (NAL Call No.: DNAL GV191.42.R63P67 1984).

Q220

WILDLIFE MITIGATION FEASIBILITY STUDY, TENNESSEE-TOMBIGBEE WATERWAY, ALABAMA AND MISSISSIPPI.

MOBILE, ALABAMA DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS FEBRUARY 1983 (EPA: FEBRUARY 16, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O, ARLINGTON, VA 22209. 3 VOLUMES. (NAL Call No.: 83-0128D).

(PUR)IMPLEMENTATION OF A PROGRAM TO MITIGATE IMPACTS TO APPROXIMATELY 62,800 ACRES OF WILDLIFE HABITAT RESULTING FROM THE CONSTRUCTION AND OPERATION OF THE TENNESSEE-TOMBIGBEE WATERWAY (TTW) IN ALABAMA AND MISSISSIPPI IS PROPOSED. THE AFFECTED HABITAT SUPPORTS APPROXIMATELY 33,500 PERSON-DAYS OF CONSUMPTIVE WILDLIFE USE IN THE FORM OF HUNTING ANNUALLY. THE TTW PROJECT WILL, HOWEVER, RESULT IN A NET GAIN OF 18,833 PERSON-DAYS OF NONCONSUMPTIVE WILDLIFE USES ANNUALLY IN THE FORM OF WILDLIFE PHOTOGRAPHY OPPORTUNITIES. FISHERY RESOURCES ASSOCIATED WITH THE WATERWAYS WILL SUSTAIN A NET GAIN FROM CONSTRUCTION OF THE TTW DUE TO CREATION OF NUMEROUS LAKES, SHALLOW WATER EMBAYMENTS, SEVERED BENDWAYS, AND DEEP POOLS; THEREFORE NO FISHERY-MITIGATION PROGRAM IS DEEMED NECESSARY BEYOND THAT WHICH HAS ALREADY BEEN CONDUCTED IN ASSOCIATION WITH THE TTW PROJECT. THE PREFERRED WILDLIFE MITIGATION SCHEME WOULD INVOLVE INTENSIVE MANAGEMENT OF EXISTING TTW LAND AND ACQUISITION AND MANAGEMENT OF 28,600 ACRES OF FLOODPLAIN FOREST. ALL LANDS TO BE PURCHASED FOR MITIGATION PURPOSES WOULD LIE WITHIN 50 MILES OF THE RIGHT-OF-WAY CORRIDOR FOR THE TTW PROJECT. SPECIES FOR WHICH SPECIAL MANAGEMENT PRACTICES WOULD BE DEVELOPED WOULD INCLUDE WHITE-TAILED DEER, SQUIRREL, RABBIT, RACCOON, FOX AND OTHER FURBEARERS, QUAIL, MOURNING DOVE,

WOODCOCK, WILD TURKEY, SONGBIRDS, WOOD DUCK, OTHER WATERFOWL, RED-COCKADED WOODPECKER, AND ALLIGATOR. THE MANIPULATION OF PLANT SUCCESSION WOULD BE EMPHASIZED AS THE PRINCIPAL MEANS OF PROVIDING HABITAT REQUIREMENTS. TYPICAL MANAGEMENT PRACTICES WOULD INCLUDE INTERMEDIATE CUTTINGS, PRESCRIBED BURNING, MAST MANAGEMENT, CREATION OF OPENINGS, INSTALLATION OF ARTIFICIAL NESTS, WATER-LEVEL MANIPULATION, REFORESTATION AND SUPPLEMENTAL PLANTINGS, ACID SOIL MANAGEMENT, AND AQUATIC PLANT MANAGEMENT. ANNUAL COST OF THE PROGRAM OF MITIGATION IS ESTIMATED AT \$1.7 MILLION OR \$2.7 MILLION, DEPENDING ON WHETHER A 3.25-PERCENT OR A 7.85-PERCENT INTEREST RATE WAS OBTAINED. (POS)IN AD

120 JOBS WOULD BE CREATED DURING THE 115 MONTHS OF CONSTRUCTION ACTIVITY. (NEG)DEVELOPMENT OF 891 ACRES OF LAND AND WATER FOR PROJECT PURPOSES WOULD RESULT IN INUNDATION OF 4.1 MILES OF STREAM AND DISPLACEMENT OF 60 ACRES OF BRUSH, 600 ACRES OF SILVER SAGEBRUSH GRASSLAND, 15 ACRES OF UP

0221

YELLOWSTONE DIVERSION PROJECT, DAWSON COUNTY, MONTANA.

BILLINGS, MONTANA DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION JUNE 1983 (EPA: JUNE 16, 1983). USDA EMPLOYEES REQUEST DOCUMENTS FROM NATIONAL AGRICULTURAL LIBRARY OTHERS ORDER FROM INFORMATION RESOURCES PRESS, 1700 NORTH MOORE STREET, SUITE 70 O. ARLINGTON, VA 22209. 2 VOLUMES. (NAL Call No.: 83-0433F). (PUR)GRANTING THE INTAKE WATER COMPANY (IWC) A RIGHT-OF-WAY TO CONSTRUCT AND OPERATE A PUMPING STATION, WATER PIPELINE, AND STORAGE RESERVOIR ALONG THE YELLOWSTONE RIVER IN DAWSON COUNTY, MONTANA IS PROPOSED. THE FACILITIES, KNOWN AS THE YELLOWSTONE DIVERSION PROJECT AND LOCATED NEAR INTAKE, MONTANA, WOULD ALLOW IWC TO DIVERT UP TO 80,650 ACRE-Feet ANNUALLY FOR USE IN PORTIONS OF DAWSON AND WIBAUX COUNTIES IN MONTANA AND GOLDEN VALLEY COUNTY, NORTH DAKOTA. DEVELOPMENT OF THE WATER RIGHTS WOULD INVOLVE CONSTRUCTION OF A 2,300-FOOT-LONG, 100-FOOT-HIGH DAM TO CREATE A 25,000-ACRE-FOOT RESERVOIR WITH A SURFACE AREA OF 750 ACRES; CONSTRUCTION OF OUTLET WORKS AND A PUMP STATION BELOW THE DAM; INSTALLATION OF DIVERSION AND PUMPING FACILITIES ON JOE'S ISLAND TO DIVERT WATER AT A MAXIMUM RATE OF 200 CUBIC FEET PER SECOND; PLACEMENT OF TWO PARALLEL 11,700-FOOT PIPELINES WITH DIAMETERS OF 42 INCHES; CONSTRUCTION OF A FOUR-MILE TRANSMISSION LINE; AND CONSTRUCTION OF A SIDE CHANNEL BRIDGE AND ACCESS ROAD ON JOE'S ISLAND. THE DAM AND RESERVOIR WOULD BE SITUATED AT THE LOWER END OF BOX ELDER CREEK AND WOULD CONTROL A DRAINAGE AREA OF 140 SQUARE MILES. FIVE POTENTIAL BORROW AREAS COULD BE USED FOR MATERIAL FOR DAM CONSTRUCTION. (POS)THE PROJECT WOULD MAKE ENOUGH WATER AVAILABLE TO ACCOMMODATE EXPECTED INCREASES IN POPULATION AND INDUSTRIAL DEVELOPMENT IN THE REGION. A PORTION OF THE PROJECT WATER WOULD BE USED FOR INDUSTRIAL PURPOSES INVOLVED IN THE DEVELOPMENT OF COAL RESERVES AND CONVERSION OF MINED COAL INTO VARIOUS SYNTHETIC FUELS. THE RESERVOIR WOULD CONSTITUTE A SIGNIFICANT RECREATIONAL RESOURCE, PROVIDING OPPORTUNITIES FOR FISHING AND OTHER WATER-RELATED RECREATIONAL ACTIVITIES. APPROXIMATELY

- Adams, P.W. 159
 Adamson, J.K. 25
 AECTCV. 154
 AKFRAC. 76
 Algieri, W.G.-Nutter, W.L. 113
 Allen, J.A. 183
 Altwickier, E.R. 16, 17, 18
 Altwickier, E.R.-Clesceri, N.L. 108
 Anderson, B. 189
 Anderson, H. Michael.-Gehrke, Craig.-Wilcove, David Samuel.-Carey, Henry C.-Olson, Jeffrey T.-Rice, Richard E. 134
 Anderson, T.D.-Helvey, J.D. 27
 APMB. 96, 135
 Archey, W.E. 133
 Askew, G.R. 208
 Aslin, R.G. 74
 ASORAB. 151
 Atchison, F.D. 74
 Aumen, N.G. 96, 135
 Avers, P.E. 215
 AWMAD. 139
 Bal, A.S. 164
 Balci, A.N. 168
 Bauer, S.B. 63
 Bayley, S.E. 44, 179
 Beasley, J.L. 200
 Beasley, R.S. 169, 213
 Beasley, R.S.-Miller, E.L.-Turton, D.J. 76
 Beck, A.E. 154
 Bednarz, T. 143
 Benzel, T.C.-Lu, R.L.-Thiel, D.A. 87
 Beven, K.J.-Cosby, B.J.-Sappington, D.E. 170
 Bilby, R.E. 36
 Bilby, S.H.-Ward, J.W.-Heffner, J.T. 195
 Binns, W.O. 81
 BIDGEP. 175
 Blackburn, W.H. 75
 Blackburn, W.H.-Pearson, H.A.-Hunter, T.K.-Knight, R.W. 14
 Blackie, J.R. 54
 Bockheim, J.G. 87
 Bockheim, J.G.-Leide, J.E.-Wentz, D.A. 150
 Bombowna, M.-Lewinski, A.-Pasternak, K.-Reczynska-Dutka, M.-Szlaga, J.-Trela, K.-Wrobel, S.-Zygmuntowa, J. 143
 Borg, H. 47
 Bormann, F.H. 7
 Bottomley, P.J.-Gregory, S.V. 96, 135
 Brahmer, G. 65
 Brooks, K.N. 141
 Brown, M.T. 77
 Brozka, R.J. 67
 Bruenig, E.F. 13
 Bryant, M.D.-Lienkaemper, G.W.-Sedell, J.R. 142
 Bulatkin, G.A. 28
 Burbridge, P.R. 204
 Bush, P.B.-Douglass, J.E.-Todd, R.L. 147
 Bush, P.B.-Grant, M.A. 216
 Calvo, A.-Hazen, T.C. 187
 Cameron, Kenneth A. 158
 Cassells, D.S. 97
 Chang, M.-Rashin, E.B. 39
 Chang, M.-WARBA. 56
 Chen, C.W.-Gherini, S.A. 109
 Chen, C.W.-JOEEDU. 2
 Cheney, S. 3
 Clairain, E.J. Jr. 82
 CNRXA. 111
 Corbett, E.S. 121
 Corbett, E.S.-Mussallem, K. 20, 21
 Correll, D.L. 138
 Cosby, B.J. 128
 Cowie, B. 99
 Cronan, C.S. 22
 Cabbage, F.W. 214
 CUMIDD. 187
 Dann, M.S. 32
 David, M.B. 42
 Davis, R.L. 101
 DeHaven, M.G.-Knight, R.W. 75
 Dewalle, D.R. 4, 192
 Dissmeyer, G.E. 176
 Donald, A.P.-Brown, S.J. 105
 Driscoll, C.T. 26, 178
 Driscoll, C.T.-Likens, G.E. 175
 Duffy, P.D.-Nelson, N.S. 24
 Duffy, P.D.-Ursic, S.J.-Nelson, N.S. 209
 Duncan, S.H. 195
 ECBUD. 11
 ECOLA. 136, 138
 Edmonds, R.L. 212
 Elias-Montalvo, E.E. 187
 ENVPA. 105
 Erickson, D.C.-XARRA. 149
 ESTHAG. 26
 Events, J.W.-AECTCV. 171
 Fahey, T.J. 69
 FECMDW. 216
 Feger, K.H. 65
 Feller, M.C. 52, 103
 Ffolliott, P.F. 141
 Finlayson, B.L. 181
 Firestone, M.K. 40
 FOSCA. 36
 Foster, B. 176
 Foster, N.W. 1, 191
 Foster, N.W.-Morrison, I.K. 72
 Fowler, W.B. 27
 Frankenhuyzen, K. van-Roman, B.-Koeman, J.H. 171
 Frear, S.T. 194
 Fritz, B.-Ambroise, B.-Viville, D. 73
 FRSTA. 25
 Fry, G.-Cooke, A. 190
 Fuller, R.D.-Driscoll, C.T. 161
 Gambrell, R.P. 23
 Gary, H.L.-Morrison, S.M.-Sanford, G. 149
 Gherini, S.A. 93
 Gilmour, D.A.-Gordon, P. 97
 Golden, Michael S. 79
 Goldsborough, L.G. 154
 Goldstein, R.A. 109
 Gosz, James R.-Carlson, Clarence A. 219
 Granillo, A.B. 39, 169
 Gregory, J.D. 124
 Grip, H. 11
 GRWAA. 156
 Haan, C.T.-Miller, E.L. 129, 211
 Hall, R.J. 49
 Hanson, D.G. Jr. 15
 Harper, W.C. 200
 Heede, B.H. 110
 Helvey, J.D. 51, 107
 Hileman, L.H. 137
 Hilgert, J.W. 146
 Hindall, S. M. 60
 Holcombe, E.E. 102
 Hook, Donal D.-Lea, Russ. 78
 Hooper, R.P. 31
 Hornbeck, J.W. 152
 Hornberger, G.M. 170
 Hornung, M.-Pyatt, D.G.-Anderson, A.R. 25
 Howard, R.J. 183
 Hudson, J.A.-Blackie, J.R. 139
 Hudson, R.J.M.-Gherini, S.A.-Dean, J.D.-Goldstein, R.A. 2
 Ice, G.G. 180

Iwatsubo, G. 140
 James, B.R. 8, 9
 Jansson, P.E.-Johnsson, H.-Nilsson, S.I. 11
 JCOHE6. 177
 JEVQAA. 24, 32, 45, 61, 87, 147, 148, 161, 163, 191, 209
 JFUSA. 70, 124
 JHYDA. 10, 47, 130, 160, 168, 192
 Johannes, A.H. 16, 108
 Johannes, A.H.-Ciescenti, N.L. 17
 JSWCA3. 20, 21, 123, 210
 Kale, C.K. 164
 Katz, J.-Mangels, G.-Hunter, J.V. 30
 Kendall, R.L. 113
 Khalid, R.A.-Patrick, W.H. Jr. 23
 Kleiss, B.A. 82
 Kochenderfer, J.N.-Edwards, P.J. 51
 Krajenbrink, G.J.W. 130
 Krause, H.H. 46
 Krecmer, V. 120
 Kriewall, D.F. 112
 Kuenzler, E.J. 205
 Kunkle, S.H. 107
 Lai, F.S. 188
 Landis, T.D. 111
 Lang, G.E. 106
 Langan, S.J. 12
 Larson, G.L. 33
 Lawrence, G.B. 161
 Lawrence, S.J. 144
 Lawson, E.R. 76, 217
 Lawson, E.R.-XFGSA. 137
 Lee, C.R. 126
 Leonard, R.-Sheridan, J. 123
 Leonard, R.A.-Asmussen, L.E.-Todd, R.L. 136
 Leonard, R.E.-Creveling, J.D. 94
 Li, C.S. 150
 Likens, G.E. 7
 Likens, G.E.-Hedin, L.O.-Eaton, J.S.-Bormann, F.H. 26
 Litzinger, M.E. 89
 Lodenius, M. 155
 Lowrance, R. 123
 Lowrance, R.R. 136
 Lynch, J.A. 20, 21, 121
 Lynch, J.A.-Corbett, E.S. 32, 167, 177
 Macdonald, T.D. 162
 Mace, A.C.-Neary, D.G.-Swindel, B.F. 92
 Major, Jon J. 158
 Martin, C.W. 50
 Martin, C.W.-Smith, C.T. 152
 Mathur, H.N. 86
 Mawson, J.C. 133
 McClurkin, D.C. 24, 209
 McColl, J.G. 40
 McCullough, J.D.-Granillo, A.B. 56
 McGregor, M.D. 174
 McGuire, P.E. 145
 McKee, W.H. Jr. 80
 Megahan, W.F. 53, 165
 Michael, J.L. 48, 148
 Miller, H.G. 206
 Miller, R.L. 101
 Miner, R.A. 88
 Mok, L.-Hudson, R.J.M.-Davis, G.F.-Chen, C.W.-Goldstein, R.A. 93
 Moore, D.G.-Fredriksen, R.L. 102
 Moore, I.D. 104, 160
 Moore, T.R. 43
 Neal, C. 10
 Neary, D.G. 48, 58, 147, 216
 Neary, D.G.-Swank, W.T. 119
 Neary, D.G.-Wells, M.J.M. 148
 Nessel, J.K. 44
 Neuman, L. 172
 Newbold, C. 190
 Newson, M.D. 54
 Newton, M. 163
 Nichols, D.S. 64, 122
 Nichols, D.S.-WAPLA. 131
 Nicolson, J.A. 1, 35, 72
 Nicolson, J.A.-Hazlett, P.W. 191
 Nodvin, S.C. 175
 Noel, D.S.-Federer, C.A. 50
 Nuckolls, J.R. 104, 160
 Nutter, W.L. 124
 Nutter, W.L.-PSAFA. 207
 NYFLAV. 69
 Ogner, G. 84, 85
 Ormerod, S.J. 105
 Ozyuvaci, N.-Ozhan, S. 168
 Perina, V. 120
 PERTD. 188
 Peterjohn, W.T. 138
 Peters, N.E. 178
 PGWTA. 37, 164
 Pinkowski, R.H. 45
 POASA. 186
 Ponce, S.L. 38
 Ponce, Stanley L. 203
 Potter, F.I. III. 177
 Potter, Loren D. 219
 Potts, D.F. 189
 Pratt, J.M.-Likens, G.E. 49
 Prettyman, D.-Gross, M. 131
 Probst, A. 73
 Raj, S.F.H.-Naithani, S. 86
 Richardson, J.-EMNGD. 185
 Riekerk, H. 92, 119, 210
 Riekerk, H.-WARBA. 100
 Riha, S.J. 8, 9
 Rishel, G.B. 167
 Roberts, G. 129
 Rochelle, B.P. 186
 Rogerson, T.L.-Hileman, L.H. 217
 Rolfe, G.L.-Arnold, L.E. 45, 67
 Ronen, D.-Duijvenbooden, W. van-Magaritz, M. wever, D. 130
 Rothwell, R.L.-FRURA. 62
 Rydellius, J.A. 70
 Samsuddin, M. 188
 Schantz, L.G. 112
 Schindler, D.W. 179
 Schindler, David, W.-Averett, R. C. 203
 Schofield, C.L. 69
 Schofield, N.U. 151
 SENSD. 30
 Shanaghan, P.E.-Johannes, A.H. 18
 Shanley, J.B. 125
 Sharpe, W.E.-Izbicki, J.A.-Wieries, D.L. 4
 Sheets, P.J. 93
 Sheppard, M.I. 61
 Shoemaker, C.A. 31
 Siegel, D.I. 156
 Siegel, W.C.-Haines, T.K. 214
 Silsbee, D.G.-HYDRB. 33
 Simola, H.-BECTA. 155
 Solomon, R.M. 215
 Spivey, M.R.-Mason, R.H. 145
 SSSJD. 8, 9, 15, 40, 150
 Stednick, J.D. 55
 Stoneman, G.L.-Ward, C.G. 47
 Stottlemeyer, R. 15, 196
 Straub, P.A.-Carter Ewel, K.-Odum, H.T. 185
 Struchtemeyer, R.A. 42
 Sullivan, K. 117
 Swank, G.W. 184
 Swank, W.T. 29, 182
 Swanson, F.J. 142
 Swift, L.W. Jr. 68
 Swistock, B.R.-Sharpe, W.E. 192
 SWJUA. 23

Taylor, R.L. 159
 Ternan, J.L.-Kent, M. 95
 Thibault, D.H.-Mitchell, J.H. 61
 TUSCA. 39
 Trettin, C.C. 98
 Troendle, C. 196
 Tsutsumi, T. 140
 Turton, D.J. 129, 211
 Uchrin, C.G. 30
 Uchvatov, V.P. 28
 Unwin, J.P. 88
 Vaananen, P. 37
 Verry, E.S. 64, 71
 Waide, J.B. 29
 Wann, D. 193
 WAPLA. 16, 17, 18, 22, 65, 93, 106, 108,
 109
 WARBA. 48, 52, 71, 117, 144, 159, 169,
 189, 195
 WARED4. 28
 Werner, R.G. 94
 Whigham, D.F. 218
 Whitehead, P.G. 12
 Wieder, R.K. 106
 Wigington, P.J. Jr. 144, 186
 Williams, A.G. 95
 Williams, T.M. 173, 208
 Windsor, C.L. 157
 Wong, N.R. 181
 Wood, J.C. 14
 WRERA0. 31, 125, 128, 170
 Wright, R.F.-Hornbserger, G.M.-Galloway,
 J.N. 128
 Wu, A. Y. K.-Papworth, M. P.-Flynn, D.
 W. 59
 XFGSA. 77, 82, 119, 157, 173, 183, 205
 XFGTA. 51
 XFPNA. 27
 XFRMA. 196
 XFTRA. 142
 XGTIA. 141, 174
 XPNWA. 102
 YAXAA. 122
 Zasoski, R.J. 212

U.S. Department of Agriculture
National Agricultural Library
Beltsville, Maryland 20705

OFFICIAL BUSINESS
Penalty for Private Use, \$300



Postage and Fees Paid
United States
Department of Agriculture
AGR : 01